The Builder.

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Materials and Inventions at the Architectural Exhibition.

THE list of exhibitors in this department has not increased to the extent that might be expected, which is so much the better for those who do avail themselves of the opportunity afforded, and from which many of them have derived great advantage on previous occasions. When the new galleries are formed and opened in Conduit-street, manufacturers and patentees will be blind to their own interests if they do not send their wares. Several manufacturers feel the importance of obtaining good accommodation for such an exhibition so strongly that they have taken shares in the company. Many others might wisely do the same thing. In the new galleries the various articles exhibited should be classified and kept together. At Suffolk-street the committee are unable to effect this: thus we find clay wares, for example, scattered over both rooms. Eastwood and Sons (No. 1) exhibit some good bricks and crest ornaments. R. and N. Norman, in similar articles, (3) show they have a fine clay to work on. The Ornamental Brickwork (15) exhibited by Lewis Tomson is excellent. Every line is true; and truth, whether in bricks or men, is a fine thing. James Luff, who sends Moulded Bricks and Terra-cotta Panels from a design by Mr. Buxton, M.P. (26) obtained honourable mention from the jury at the Exhibition of 1851. The panels have on the face of them branches of the hop-plant. No. 8 is a collection of bricks and tiles, mostly the blue ware, a very hard material, by W. Gilbert, of the Tividale Works, South Staffordshire. The price should be given with all bricks exhibited, as upon this depends the use that can be made of them. What very different things the word "brick" stands for! On one hand, a compact regular form that would hold its own under a weight of 60 or 70 tons, and would last for ever; on the other, a coarse, friable, twisted, party-coloured, half-burnt piece of earth, that breaks in the handling, and is utterly worthless.

Referring to the finer uses of clay; we have (No. 5), the Tesselated and Mosaic Tiles, and the Glazed and Coloured Bricks, of the Poole Architectural Pottery Company. The specimen of mosaic tiles exhibited by the company seems to show a considerable improvement on previous specimens as respects truth of lines. Of the Specimens of Geometrical Mosaic, sent by Maw and Co. (16), we must speak in the highest terms: the works are the best they have yet produced, both in respect of colour and excellence of finish. The carved line design is, we believe, a novelty in *Mosaic*, at 7s. 6d. a square yard. In figured or encaustic tiles, it could not be executed under nearly three times that price: they circulate a very useful pattern-book, containing some designs of a superior character.

Marked No. 4, are articles manufactured in Scott's patent cement. This cement came into question on the occasion of the Tottenham-court-road accident. It has strong testimonials in its favour. An example of impressed ornament in this material is suggestive. The Decorated Organ-front, 5 A, by S. Fisher, would be ineffective at a distance, a point often not sufficiently considered in decorations of this kind. The Stove exhibited by the London Warming and Ventilating Co. (Mr. Woodcock, secretary), is founded on Mr. Goldsworthy Gurney's views. It is similar in some respects to what is known as the Gill Stove. The museum and buildings of the Department of Art, at Brompton, are warmed by these stoves, and they are well spoken of there. Two of the stoves have been at work during the winter, at St. Andrew's Church, Pimlico. Mr. Pierce, we may here say, exhibits a selection of fresh air and other fire-lump grates, the reputation of which is established.

Amongst the specimens of Parquet Floors and Borders exhibited by the London Parquetry Works (7), is some patent waterproof veneered panelling. "By this system," says the exhibitor, "the dampest walls can be lined with panels of *any size*, in wainscot, walnut, mahogany, rosewood, maple, or other fancy woods, with solid mouldings, at about one-half the cost of the old solid panelling, and without the disadvantage of continual warping, shrinking, and cracking."

The Lizard Serpentine Company are gradually getting their beautiful material into use. They have sent a number of specimens of the stone (No. 9) as applied in the manufacture of chimney-pieces, pedestals, balusters, and other ornamental works. We have before now expressed our admiration of it. The workmanship of some of the specimens, by the way, is very good.

We were asked in the room how marbles and similar materials are turned. The first process is to level one face of the piece selected, and, with a pair of dividers, strike a circle round the outer edge; then, with a mallet and pointed chisel, roughly to work it to a circular form. It is then ready for the lathe, and being fastened with resinous cement to an iron chuck, it is screwed to the lathe spindle, and a very slow motion given to it. The only tool used is a bar of fine steel, about 30 inches long by $\frac{3}{4}$ in. square, drawn to a point, and well tempered. This is forcibly applied to the marble, which it reduces to the proper form by spelching off small pieces. After the right outline is acquired with this tool, it is ready for the grinding process, the first step being to apply a piece of coarse and hard sandstone, with water (the lathe now having a rapid motion), until all the tool marks are ground out. A finer piece of sandstone is then used to remove the coarse scratches of the previous one, and so on with a few other and still finer stones, until all the scratches are quite obliterated. This prepares it for polishing. A piece of cotton cloth, washed quite clean, and well rubbed with flour-emery, is applied to the marble, and polishes it to a certain extent. A similar piece of cloth is then rubbed over with putty-powder, which gives a very high polish.*

Of enamelled slate G. E. Magnus exhibits several specimens in the shape of chimney-pieces, baths, and stoves (10); but we have nothing to add to former expressions of commendation.

George Jennings, amidst a large collection of his closets, shutter-fasteners, stench-traps, earthenware sleeper-blocks, and sluice-valve (of which latter he states there are more than 1,100 in use), exhibits a length of the Flue-pipe, with extraction chambers (or, as we should rather call them, extraction pipes), for taking off vitiated air, concerning which we lately admitted some letters. If this double flue, so to speak, can be produced with soundness, and at moderate price, it offers a means of ventilation which ought to be largely taken advantage of. A somewhat similar arrangement, we are told, was once attempted at Manchester. Charles Botten and Son's Regulator Closets (14), and H. Tyler and Co.'s brasswork for plumbers (24), are known to most of our readers.

The specimens of Ransome's Patent Silicious Stone (25), shows an inattention to design, as has been the case on previous occasions. The large chimney-piece, if that be its purpose, displaying in its ornamentation an elliptical arch, cherubim, rococo shield, and the conventional fourteenth-century ball-flower, all jumbled together, jars sadly. Cox and Son, who end the catalogue, have some good oak carving (No. 28). This firm has recently issued a fully illustrated trade list.

Messrs. Hart's stand will be found in the left-hand apartment at the end of the large room, and includes some very excellent specimens of brass-work. Some of the house-fittings, knobs, bell-pulls, and other works, are very good. In the adjoining apartment J. Hardman and Co. have some mediæval church and domestic metal-work, which may be fairly regarded as showing the present position of the art of working in metals: in other words, it is as good as anything we have yet done in these days. Rees's patent "self-shadowed glass," as it is called, displayed over the fire-place in this room, might be effectively used as wall diapers. The iron-work of a Jewel Casket (449), executed by Potter, is a skilful production: the ornaments would have been the richer in effect if there had been a second plate of iron introduced on the face: cost, however, had of course to be considered. The casket itself, designed by W. Burges and painted by E. Poynter, presents subjects relating to the extraction and history of gold and the precious stones, and is an artist-like and interesting result. The metal-work we have spoken of will not be the least attractive part of the exhibition,—

> "For since the birth of time, throughout all ages and nations,
> Has the craft of the smith been held in repute by the people."

THE WORKS IN THE ARCHITECTURAL EXHIBITION.*

THE meritorious qualities, and some of the defects, of the modern Gothic school of architecture in England, are exemplified in the series of drawings (371 to 382) representing the design for the Lille Cathedral, by Messrs. Clutton and Burges, which obtained the first premium in the competition. The quantity of design which they contain—for all the features of the plan of a cathedral, the complete decoration in ornament and sculpture; in mural painting, tapestry, lead-lights and stained glass, and tile-paving; and for every kind of fitting and furniture in stone, wood, iron, and brass-work—is really enormous; and the beauty of conception in many of the details, as in figure subjects, and in the mixture of animal life and trefoliated ornament, is most commendable. Everything seems to be shown, that could be needed to complete the structure and furnishing of such a building; and the precision and skill of the drawing throughout, are worthy of all praise. With this it is curious to observe in some of the sculpture, a studious ungainliness of attitude and determined contradiction to anatomy, quite sufficient to justify the satire of *Punch*; and some of the fittings, as the font-cover in mimicry of a castellated structure, seem to be copied line for line from the typical and symbolical, rather than representative drawings of old manuscripts, or from card-board chimney-piece ornaments of recent date. The organ, though deserving of illustration in the *Annales Archéologiques*, by M. Didron (the engraving is shown in 382), if somehow suitable to its location, is surely ugly and bad, itself architecturally considered, and redeemed only by the poetry of the connected story and series of the sculpture. The plan of the cathedral in the design, is cruciform, with

* Reports by the Juries on Works in the '51 Exhibition.

See page 22, *ante*.

western towers and spires, apsidal east end and surrounding ambulatory and chapels,—and a larger chapel to the Virgin in the usual position,—and there are also the features of the crypt, double rood-screen; three large western doorways, and one to the north transept; and the triforium, clerestory, groined ceilings, flying buttresses, and massive wall buttresses. The organ is placed in a western gallery. The general style is that of the Early French Gothic; and this is exhibited, not only by the decorative sculpture of the great portals, the central *flèche*, the cluster of chapels at the east, and similar features, but in the character of the carved ornament before alluded to. The nave piers are square, with responds or engaged shafts. The buttresses are carried up to a considerable height, and terminated by a weathering as well as a tabernacle with square crocketed capping. Amongst the internal fittings may be named the *baldachino* of the high altar, tastefully enriched with colour; and having the figure of an angel bending forward, and holding the chain which suspends the burning lamp. As a piece of hand-work, the drawings are most admirable.

The Brighton Pavilion alterations competition is represented by portions of three sets of drawings; that is to say, we have three external perspective views, two views of the Antheum, and two of the Music-hall, as proposed by different authors. The interiors, as might be expected in the peculiar style, form the most satisfactory portion of the designs; and they indeed display a considerable amount of cleverness in the use of sparkling colour. From the deficiency of plans and other drawings, it is difficult to judge of real merits, as in the case of this modification of an existing building; but, looking merely to the exterior, in the views, the design of Messrs. Manning and Scott (357) appeared to be the best, though it would be improved by some use of colour. One principal addition is that of a lofty tower at an angle of the buildings. The design of Messrs. W. J. Green and L. De Ville, for which the first premium of 200*l.* for this conversion of the riding-house, stables, &c. into public buildings, was awarded, is decorated on the exterior (356) with narrow bands, and arabesque or Indian ornament to the spandrils of the arches, in red; and Mr. Webbe's design alters the exterior (361) greatly, by the addition of porches and verandahs with red-tiled roofs, turrets, and towers—some with large bulbous domes—and decoration of lattice-work pattern in blue colour to the spandrils. The interior of the Antheum, by Messrs. Manning and Scott (358) and by Mr. Webbe (360), is in each case effectively treated, with a fountain in the centre, and decoration in positive colour in elaborate patterns. No. 358 has a simple gallery within the columns of the upper story, whilst No. 360 brackets out the same feature, introducing ornamental standards for lights. The Music-hall, both of Messrs. Green and De Ville (355) and Mr. Webbe (359) is effective; but the latter is the best, except in the management of the orchestra end. In No. 355 the projection in the centre of the orchestra front, with the steps to it from each side, fills up effectively what is often a blank, or an ungainly feature in the very centre of the view. Each design takes the elliptical form for the main ribs or arches of the ceiling. No. 355 fills in the bays, or divisions of the length, with circular lights, and groins in with transverse arches for the windows: 359 makes long lantern-lights the prominent feature, rising from a cove on each side, into which the side windows groin. Both views are elaborate in colour and gold. The ornament in 355 has the character of that of the Alhambra.

Those who think that competition affords the means of calling forth talent that otherwise would be dormant, could scarcely instance the designs for the Islington Vestry-hall which there are in the Architectural Exhibition, in evidence of their argument. There are thirteen here, and we are compelled to say a few words about the drawings, though the whole subject of this competition may be fresh in our readers' recollection. It will be remembered, that the committee began by rejecting, indiscriminately, all designs which had towers. Now, as a tower of some sort might consistently appear in a building of the kind proposed,—especially considering that a clock was not unlikely to be deemed necessary,—considering also that town-halls, as for example those of the Netherlands, have generally towers,—to object to designs on such ground alone, would have appeared as reasonable as the rejection of a design for a church on account of its showing a steeple. A collateral point in the case, going to make up the sum of absurdity and injustice, was, that no stipulation as to the omission of such a feature as the tower, occurred in the instructions. Many of the designs in the Architectural Exhibition belong to the number that were rejected on the ground referred to. Some of the designs without towers, are mere blocks, with no effect of outline or general grouping, or any produced by recesses or projections, or new combinations of detail. Such a design is that shown in Nos. 303 and 304, which exhibits only long arch-headed windows to the principal room, in an upper story. Mr. Wagstaff's design, A B C (306) "one of the four selected by the committee, and especially recommended to the Vestrymen," is still, little more than a mere block, though with the addition of decorative details—Italian, but common-place. Another design to a similar general plan, appears to be shown by the same author in No. 317. No. 305—Driver and Webber—is, we think, injured by the slight introduction of coloured materials amongst the general stone-work. The other details, of Italian character, may be inferior in themselves to those of the last-named designs: it is, however, quite consistent with this observation, to say that in certain respects the design is better,—as generally, and in regard to a doorway which there is in the clock-tower at the angle. No. 307—Finch Hill, and Paraire ("Islingtonian")—has a tetrastyle Ionic portico with a pediment of too great height, and a tower with a high truncated roof. Mr. J. W. Papworth's design (308 to 310) relies for its chief effect on the combination of yellow and red brick with white stone dressings,—the red bricks, however, being used for angles and strings, rather than in patterns. The square tower at the angle wants height, or a proper termination. The best feature is a portico of five arches on columns: the rest of the design wants decorative character.

It would be difficult to offer less evidence of *design* than there is in Mr. Goodchild's drawing (311): the Italian details are of poor character; and the four salient columns, placed very far apart, which form the chief decorative feature, have no obvious purpose. Mr. Rovedino's design, "Utilitas" (312 and 313), is in the very different manner lately in vogue, namely, that substituting arcades, with shafts or moulded jambs and coloured bricks to the arches (which last are pointed on the extrados), in the different stories, for the features of architraves and the like Italian details. The manner is already getting over-done. Mr. Rovedino's design, however, is more commendable than many. The basement is of red and yellow bricks, in courses; the main wall-surface above is of white brick, with the coloured decoration to the windows and recesses, and cornice, as before described: there is a porch of three arches on columns; and a central feature to the flank, roofed square on the plan, and surmounted by a clock turret. Mr. Edmeston's design, "Progress" (314 to 316), is perhaps the best of those exhibited. A square tower, with a diminished upper stage and a high roof, projects at the angle; and it is flanked by a porch of three arches on columns of coloured marble or granite, on steps, to inclose the entrance, and form a balcony stage above, which is surrounded with ornamental iron railing. The decorative character otherwise, is given by the long arch-headed windows of the meeting-room in the upper story, which have stone archivolts, and red brick voussoirs, rising from continuous impost-strings; whilst each opening has a central shaft and spandril ornament in iron. Mr. Dwyer, "Islington" (318 and 319), is one of those from whom more might have been expected. His manner is recognizable from the combination of French and Elizabethan peculiarities with details generally of Italian character; but the slightest attention to examples in the latter style, could not but have warned the author from the use of weak and attenuated mouldings—questionable both in architecture rustic, and *boutiquierian* (if we may invent a word for the architecture of shops and shopkeepers), and utterly indefensible in, and destructive to, the expression of a public building. The interior of the Vestry Hall, with galleries, and lighted with rose-lights, is better. The character of a public building, and meeting-hall, is what several of these designs do not express; and generally, in subjects of this kind, we may say that the defect appears to exist in designs which, from whatever arguments, depart from the basis of style long in use, giving us *mere* novelty, *mere* coloured pattern-work, or *mere* quaintness, in place of new combinations of even known features,—as of the style called "Italian," which can be enriched with materials from any and every source, but so long as the basis and general harmony are maintained. To Mr. C. Gray's design (320) some of these remarks would be properly applied. The drawing shows some excellent Italian details, conjoined with others different in style, and productive of inharmonious effect. Such features are the heads to the lower windows, *quasi*-cuspidated in form, and the twisted shafts and mouldings introduced in jambs and window-heads. The structural principles which, even in decoration, are to be observed, also are departed from in the omission of the coins to the top story,—considering that those below are of massive appearance, and that there is apparent weight in the cluster of chimney-shafts to be supported; whilst the modification from the usual profiles of window-trusses, to a line bellying outwards, is of no advantage, and quite indefensible. The porch of clustered columns, the balconies, string-courses and cornice, have, however, merit,—which would have characterized the whole design, had the merely eccentric features of detail been less prominent. We may here mention Mr. Gray's "Woburn Chambers, Henrietta Street, Covent Garden" (75), as injured by many of the like errors. It offers some good details; and the desire of its author, in each of his works, to do something better and something new, is one such as, duly regulated, would lead to the results that are wanted. He has in this last work, chosen cement as a vehicle of his design, in place of decorative brick-work. What his manner before wanted, was not novelty of detail, but proportion in the separate window-openings, and grouping of them, or of the stories, in the height of the building.

There are still two more of the designs for the Islington building in the catalogue. The design by Mr. J. P. Jones (321), may claim to be the best of these, on the score of general character,—which, however, as nearly belonging to the style of Chelsea Hospital, is hardly desirable for adoption now, and in the case of the present required structure,—but the centre of the entrance front, with a loggia with rusticated piers, on steps, and pilasters and arch-headed windows in the upper floor, is well managed. A square portion of the plan at the angle is carried up as a low tower, and has the clock faces in what would be the position of dormers to the curb-roof. Red brick, and stone for dressings, of course are used. The large segmental pediment to a principal feature of the plan, is one of the defects of the old style, and architects should not imitate it. The design of Messrs. Lander and Bedells (322), is an illustration of the singular character of the works in this competition. Bad drawing and misconception of all relative proportion in details,—as witness the Brobdignagian buttresses to the ground story,—are conjoined, and seem to have acted and re-acted to produce a result which we could hardly have looked for from architects of whose works it has been our fortune at other times to speak with approval. We have no liking for damnatory criticism: in some cases, however, it is a duty; and certainly we have not lately had so little cause for congratulation in reference to the progress of our art, as that which has been afforded by incidents of the Islington Vestry Hall competition.

The designs for the Crimean Memorial, Sheffield, are seven in number, and all are in the Gothic style, and in the general outline belong to the same class as the Eleanor crosses. The same remark will apply to the principal designs for the Brotherton Memorial. Some of the number, however, include a statue, the main portion of the structure forming the canopy or tabernacle. Mr. Goldie's "Selected Design" for the Crimean Memorial (324), differs from the other works in style, inasmuch as it belongs to the Italian version of Gothic. It consists, as we have elsewhere said, of a square base with angle pedestals, supporting tabernacles and statues, with a central canopy or tabernacle, quadrangular in plan, over a seated figure; the latter being supported on a cluster of shafts of red and slate-coloured marble. An illustration of this design will be found in our present number. The design by Messrs. Driver and Webber (325), has an upper stage to the base or pedestal, with canopied panels for sculpture: the character of the whole is that of the English Decorated Gothic, the outline is less obtusely pyramidal than the first design, and the spirelet is crocketed and enriched with lucarnes. No. 326—J. Robinson—has a square base, supporting tabernacles, and an octagonal shaft and spire-capping. No. 329—W. G. Smith—has considerable variety of feature in the plan at different stages, and in the details, but makes little use of sculpture or ornament. It has a base surmounted in each face by duplicated gables, enclosing panels and niches; above these, are various weatherings and panels, and a square tower-like stage, with pinnacles, and a crowning spirelet, octagonal and crocketed.

No. 331 — S. J. Nicholl — diminishes directly from the base to an octagonal stage surrounded by canopies and statues, and crowned by a spirelet. The base has angle buttresses, and openings with overhanging fronts which support the tabernacles. The design for the Brotherton Memorial (327), by Messrs. Pritchett and Sons, is in the Decorated Gothic style, and has a square base with crocketed gables, buttresses and pinnacles, and a niche for a statue under an ogee canopy. The last-named feature is distorted in the drawing. Above, are two octagonal stages, surmounted by a crocketed spirelet, and surrounded by niches and canopies, with statues. The general outline is good. Mr. Smith's design for the same monument (328) has a square base, gabled, with panels and buttresses, above which is an octagon stage, with duplicated gables; and this is surmounted by a tall ogee capping on an octagonal base. Both Mr. Smith's designs would have been improved as monuments, by being made more sculpturesque in character. The design by Mr. Nicholl (330) has a peculiar plan: the principal front has a wide arch, and the back of the monument a cluster of arches on octagonal plan, the whole forming a canopied shrine over a raised sarcophagus or tomb, which is reached by lateral flights of steps. No. 332, by Mr. Robinson, is a structure with bearing shafts and cusped arches, raised over a tomb. The miniature gables to the cornice and heads of the arches, are very unsightly: the arches appear to have no office of support, and the effect is that of structural weakness.

VISITS TO MANUFACTORIES CONNECTED WITH BUILDING, DECORATION, AND FURNISHING.

FLOOR-CLOTH.

MAKING general inquiry, it is suprising to find how little is known of the history of, and the mode of producing, many articles of general use, which are almost constantly in view: for instance, we have met with house-painters who had been engaged on that work for a number of years and had no idea of the manner of manufacturing white-lead or the other pigments which their occupation constantly called them to use; and it is this ignorance which often causes loss of both health and life. Independently, however, of such important considerations, knowledge seldom fails to convey pleasure, and induce feelings of interest in connection with the objects concerned. A notice of some of the more important manufactures connected with building and furnishing may therefore interest our readers. In such a wide field it is not easy to determine the order of subject, but, guided by chance on the present occasion, we will proceed to

The Oil-cloth Works of Messrs. Smith and Baber, at Knightsbridge, which form a prominent and well-known feature in the neighbourhood. The building is of considerable height and extent, and is not destitute of a certain amount of merit as regards its outward architectural design. An inscription on the outside of the building announces that this manufactory was originally founded in 1754, by Nathan Smith (it was on a comparatively small scale): it has been destroyed by fire, but, phœnix-like, has risen of increased size from the ashes.

On entering the building the necessity for such large area is at once evident, for, suspended from a great height, with space between to admit the passage of air, is an immense number of webs of oil-cloth undergoing the process of drying, and each of which is from 60 feet to 100 feet in length, and 24 feet in breadth. Without, however, at present particularly noticing these immense productions, and somewhat overpowered by the oily smell of the atmosphere, we will follow our guide to inspect some large bales of stout canvas, which, we are told, is manufactured by Thomas Bell, of Dundee, without a seam, of size sufficient for the sheets of oil-cloth to which we have alluded.

In order to commence this manufacture, a piece of the canvas of the size required is laid upon the floor of the large drying apartment, and attached to a strong roller of the necessary width, and then hoisted aloft by a crane provided for that purpose. We will follow the web up sundry steep staircases, from which we have views very like the upper part of the stage of our large theatres; and having reached a considerable elevation, find that the long side of the canvas (the short side is fastened to the upright roller) has been fixed into a frame. We then perceive that there are substantial uprights of wood at a distance from each other, corresponding with the width of the roll, to which the canvas is tacked: it is then fastened at the bottom, and is strained by the movement of the roller, until the whole has a firm and resisting tightness. Having noticed this operation, we perceive that there is a considerable number of sheets strained in a similar manner, which are placed at about a yard apart, and that between each are galleries formed by a plank of wood, with posts at intervals, that can be climbed by ledges which are fixed upon them.

Having seen the pieces of canvas which have been raised and fixed, we notice that the surface is somewhat rough and downy, and has certain knots, that would not be likely to admit of the reception of a smooth surface of paint. This, however, is remedied by the workmen, who rub each side vigorously with wet pumice-stone. After this process the hand may be passed pleasantly over without interruption, and the grain of the cloth is so good, that a higher class of artists than those here employed would feel tempted to have a portion of it to operate upon. After this is dry, the sheet is covered by a coat of oil paint, in the same manner as in ordinary house-painting, on each side. When that is dry it is pumiced again, and, in consequence, the surface is still further improved; and then, in due course, three more layers of paint are laid on, on one side, and two on the other, that is, for the best work.

The manner of laying on the last coats of the colour is peculiar. The pigments are mixed until they have such a body that when the mixed tint is dashed from the pail by an ordinary painting-brush, it sticks in something of a limp putty form upon the canvas. The workman having with some force daubed on a quantity of his material, proceeds with an elastic trowel to spread it evenly about; when this has been done over the whole, and it is dry, the original canvas is of thick substance, and presents a beautifully flat and even surface. It is a work of time to dry these coats of paint; but when all is finished, each piece is removed once more to the floor of the drying-room, unrolled, and receives two square lines for guides in washing. By a skilful contrivance it is again hoisted to a horizontal table, over which, when the process we are about to describe has been completed, the sheet can be again passed to the depths below.

We have now one of the large sheets prepared with the groundwork of suitable colour, to receive the pattern, and this process is so simple and certain that it is pleasant to see it in operation.

In the printing-loft the sheet of canvas, prepared, as already described, by a tint of suitable colour, is spread over the table, and workmen are engaged at slabs, on each of which are the different tints required to complete the design: engraved wood blocks, similar to those used for letter-press printing, are each thickly covered with the colours needed to complete the design. This is managed in the same way as the registered colour printing of wood engraving and lithography. Some designs require four or five, or even more blocks of different colours to complete the pattern. Each block used for this purpose is from 18 inches to 2 feet square; at every corner is a sharp point, and the prepared canvas being passed over the top of the table, it is easy to fix the blocks covered with paint, and by pressure transfer the patterns to the cloth. When one of these sheets has been thus finished, and any imperfections in the printing removed by touching neatly with pencils, the cloth is hung in the drying-room for at least six months, when it is fit for use.

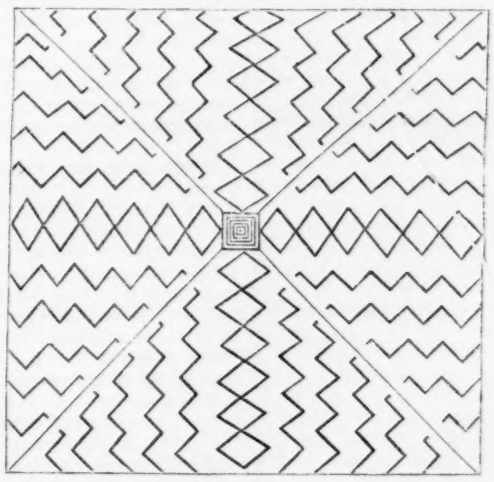
On descending towards the ground-floor we are shown a large collection of the blocks required, which, in order to prevent them from splitting, are kept well oiled and in an even atmosphere. Leading from the drying-ground are large tanks of oil, powerful mills for grinding and crushing colours, and other large tanks filled with the preparations of suitable thickness. Very little turpentine is used in this manufacture, and that only in extremely frosty weather.

Having thus briefly glanced at the means by which the oil-cloth is prepared, it is worth while to examine the numerous specimens which are ready for use in the drying-room. Some consist of imitations of marble floors, of divers colours, and of diamond and square forms; others are copies of marqueterie. There are also imitations of Roman mosaic pavements and mediæval encaustic tiles. Some patterns are designed in imitation of Turkey carpets. Some of the work is very admirable, but an entirely different style of design might be added with advantage.

In former times, richly embossed leather and other heavy substances were used for wall-hangings. Cases occur wherein oil-cloth, of suitable design, might be made available for the walls of apartments: it would have the advantage of durability, be easily cleansed by washing, and at times, when necessary, removed for the examination of the walls.

The use of a home-made description of oil-cloth is probably of considerable antiquity, but in a mercantile point of view, it was, about a century ago, in little demand, and was made in very small sheets. The idea of a whole piece of oil-cloth 100 feet by 60 feet would then have been looked upon as an impossibility as great as travelling sixty miles an hour.

To Mr. Nathan Smith this branch of art is deeply indebted. Before the year 1754, this persevering manufacturer was accustomed to manufacture floorcloth in pieces of two or three yards square—by the only method known at that time; the plan of laying on the tints of the pattern was the same as that used in the stencilling of wall patterns, viz.: either by cut cardboards or thin metal; through the insterstices the colours were applied: by this means it was difficult to get a sufficiently thick body of colour upon the cloth. In order to obviate this fault, Mr. Smith devised the use of blocks of pear-tree wood, on which he engraved a pattern, and which, like the type and wood-blocks used by the printer of books, would transfer an impression of some thickness to the prepared canvas.*



Mr. Dodd, the author of a very useful book on certain English manufactures, published by Charles Knight, says that Mr. Smith kept the discovery of the application of block-printing for a long time a secret, and that he used to print all the oil-cloth done in this way with his own hands. Less than a century ago, most traders had, or pretended to have, certain secrets which were carefully hidden from their brother professors of the same craft, and also from the curious stranger. This state of affairs is now, however, to a considerable extent changed, and manufacturers depend rather on their skill of production and the protection of the laws which foster ingenuity, than on the old-fashioned method of secret manufactures though this is not altogether given up even now.

* The adjoining engraving shows the pattern on the first wood-block used for this purpose, and which is still retained as a curiosity in Smith and Baber's establishment.

REVIEW OF THE ARCHITECTURE AND HISTORY OF THE ROUND TOWERS OF IRELAND.*

OF the subjects which have fallen within the range of architectural inquiry, few have been attended with the degree of mystery which has attached to that which we now propose to examine. Works which claim an origin in the remotest ages of the world, and which are found in regions once civilized—now lost in barbarism, have had their due share of examination and discussion, and at the present day there are very few architectural monuments in any part of the world whose use and object are not fully understood. Even the long unsolved problem of the Pyramids of Egypt has been unravelled. It is, therefore, most remarkable that the purpose of these monuments of former ages existing in our sister island should still be to many a doubtful question. The ground for examination is not so extensive as to preclude a close scrutiny of the whole of it, which makes it the more surprising that it should not have been attempted until quite in our own times, although there has been more theory and more writing upon it than perhaps any other single vexed question of an architectural nature has received. We have before us illustrations of fifty-seven of the round towers; to this number must be added five more, which will, I believe, include all that are to be found in various stages of existence, from the mere foundation or pile of stones to the complete building. I may say that these five which are wanting to us are among the least perfect remaining. Then we have to unite, in the examination, with the towers, the buildings in conjunction with which they are invariably found, and further, to make the survey complete, it should include those places at which the particular kind of building is known to have existed. The largest list that I have been able to find or make gives 120 sites, which either have, or are reputed to have had, round towers. My own visits have as yet extended to 104 of these places, and the inspection of the places, and of the authorities which have attributed towers to several of them, has shown that the number of which anything is known is something less than 120. I propose, then, to see whether it is not possible, by the architectural features of the buildings, to assign a chronological order to them, and to test and confirm this arrangement by reference to historical authorities.

Before doing so it may not be amiss, as I believe the subject has not before been brought prominently before this Institute, to sum up the various opinions that have been advocated as to the origin and use of the Irish pillar tower.

The question was first raised in 1662, by John Lynch, who wrote to controvert the misstatements of the celebrated Geraldus Cambrensis, who, in the twelfth century, had produced a topography of Ireland. Lynch remarked that the Danes are *reported* to be the first builders of these towers. In 1684, the author of the "Prospect of Ireland" adopts this report, and announces it as a fact, and, in the beginning of the next century, Dr. Molyneux, chiefly on the wrong assumption that the native Irish were ignorant of the use of lime-mortar, again attributes them to the Danes. In 1790, Dr. Ledwich, whose opinion had considerable effect at the time, followed in the same theory, and sharply contested the ground with counter theories which had then sprung up. I believe it is now on all sides conceded that these Scandinavian invaders, who held only posts on the sea-side, who are noticed in the Irish annals almost wholly for their savage and plundering habits, from the year 795, their first invasion, till the great battle of Clontarf, in 1013, when their power was finally broken,—could not have erected structures which are equally spread over the entire island. It will also occur to most, that if the towers had originated with this people, similar structures would be found in Britain, and on the Continent, where they governed or settled, and this we know is contrary to the fact.

The antagonist of Dr. Ledwich was General Vallancey, who, in 1772, suggested that the round towers were the remains of a people of fire-worshippers, and that these buildings were erected to preserve the fire of the Arch-druids. He supposed, also, that they were used for making celestial observations, and for other purposes derived from Eastern worship. Vallancey was supported by others of his own time, and, within the present century, by a very learned and discriminating writer, Dr. Lanigan, by Dr. Charles O'Connor, the learned librarian of Stowe, whose theories nearly agree with Vallancey's, although on different foundations; and by several other writers, including Thomas Moore, and some who are still living, to combat for these views, and whose ingenuity has, besides, brought in additional articles, such as that the towers were erected as places of sepulchre in Pagan times. This last idea is the result of the excavation to the foundation of several of the towers, in which human remains have unquestionably been found. Very precise accounts of the results of the operations are to be found in the *Ulster Journal of Archæology*, and in the proceedings of the South Munster Antiquaries, but it is difficult to discover in them anything which is not readily accounted for by the fact that every one of the round towers is planted in a graveyard of ancient date. As to the theories concerning fire-worship, it is to be observed that they would assign to the towers an extraordinary antiquity, not in itself impossible, but which can hardly be yielded on the very slight ground of remote affinities in ancient languages, respecting which I do not pretend to judge, but which a living writer, Dr. Petrie, has very closely examined and dismissed, and as to any analogy between these towers and existing structures, which are now and have been devoted to fire-worship, none whatever has been established, although attempted.

It has besides been put forth that the pillar towers were anchorite columns of early Christian date, in imitation of those of the Eastern ascetics, who retired to lead their lives in solitude, in a sort of pulpit forming the top of a pillar. This opinion originated with an Irish clergyman, and was warmly supported by the editor of Sir James Ware's works at the beginning of last century, and later by Dr. Milner and Mr. King.

A somewhat similar opinion in the middle of the last century gave to these towers the use of penitential prisons; and this opinion was adopted in 1806 by that distinguished antiquary Sir R. Coll Hoare.

Of these able and learned writers it may be observed, that scarcely any display the least knowledge of architecture, and they had not the advantages for the study of this branch of the subject which have since been developed. We now come to a period when this important element was introduced into the inquiry; and one of the first instances is found in "Bell's Prize Essay on Gothic Architecture in Ireland," published in 1829. He visited thirty-two of them, and gives them a place in Early Christian architecture. Then we have Mr. Wilkinson's work, giving some particulars of thirty-two of these edifices; and lastly we have the laborious and splendid work of Dr. Petrie, "The Ecclesiastical Architecture of Ireland, and the Origin and Uses of the Round Towers." Dr. Petrie combats at great length, and with great learning, the whole of the theories which I have sketched as preceding him, and designs to establish that they are of Christian and Ecclesiastical origin, erected at various periods during the fifth and thirteenth centuries; that they probably united the purposes of belfries, places of strength for the preservation of relics, sacred utensils, and valuables, and may have been used occasionally for beacons and watch-towers. He gives a vast amount of information and illustration, but his work is avowedly wanting in illustrations of the round towers themselves, which, though promised, have never been published. On the early architecture of Ireland he throws a flood of light, which shows it to have been far more important than any before his time had supposed.

I may now proceed to speak of the general characteristics of the monuments themselves, of which it is admitted by the advocates of every shade of opinion, almost without exception, that the towers were in early Christian ages used for belfries, as some say, after their original purpose was forgotten; and further, that the buildings found with them were from the first churches;—when these buildings have been noticed at all; but a majority of the theorists have left them entirely out of the question.

I have stated that the number of towers of which I have any information does not amount to 120. Of course many more must have existed in earlier times; and some idea of the loss sustained may be formed by the knowledge that nine have disappeared since the commencement of the eighteenth century, and four of them were deliberately destroyed. The towers are without exception, placed in the immediate vicinity of other buildings, which now stand together with them in graveyards. In the few instances in which by lapse of time the other buildings have disappeared or the situation may seem to be different, it can be shown on sound evidence that these adjuncts were once with them, as in the great majority of instances we still find them.

We shall see presently what evidence there is to show that these adjuncts were churches from the first; and for the present assume that they are. Usually, then, we have at each site one church and one tower; and at places where the churches are numerous, still the tower seems to belong to one in particular. Examples of this are at Inniscattery, where now six distinct buildings or churches are found, besides the round tower; and at Inniscaltra and other places which are reputed to have had the mystic number of seven churches. I have determined the position of sixty-six of the the towers in respect to their adjunct churches, of which I find thirty occupy a position to the north-west of the churches, twelve are placed to the south-west, and of the remainder five are, or were, in contact with the adjunctive buildings, and are in most respects so exceptional that I shall not further notice them at present; and the others placed to the west, north, and south. None that I have seen occupy an eastern position. Omitting the five exceptional attached towers, all are cylindrical shafts, tapering towards the top, but not always in the same ratio. Ardmore has the greatest taper. The shaft is diminished at the top by two-fifths of its lower diameter, whilst the least diminution is found in the tower at Turlough, the taper being in this case scarcely more than an eighth of the lower diameter. We have towers remaining with part or the whole of their original roofs of stone, brought into a conical form by corbelling over, so as to form, when entire, as nearly as possible, an equilateral triangle in section. In dimension, the highest towers have not always the greatest diameter. Ferlagh, Kilkenny county, is the highest; it is 100 feet to the commencement of the roof, which, when perfect, must have raised it as nearly as possible to 111 feet: the diameter at the base is 15 feet 8 inches. Kilmacduagh, the next in height, and still nearly perfect, is 96 feet 8 inches to its cornice, and must have been 109 feet complete: it is 18 feet 6 inches in diameter. Turlough, which is only 62 feet 6 inches to the cornice, and has the roof nearly perfect, was 74 or 75 feet complete, and is 18 feet diameter. This one is much below the average height of the perfect ones remaining; but there is one on a little island in the Atlantic, 6 miles from the coast of Donegal, Tory Island, which is only 40 feet to the cornice, must have been 51 or 52 feet complete, and is 16 feet 4 inches in diameter at the base. This is the least altitude that has been used, and it may have been adopted in this case from the severe trials which, from the nature of its situation, on a solitary rocky island, it was necessary it should be prepared to sustain in the Atlantic tempests. Many of the towers spring from a plain plinth, which rises 2 to 3 feet above the ground, sometimes in two steps. The entrances to the towers are invariably raised considerably from the ground,—that at Kilmacduagh so much so as to be seen in the view above the walls of the ruined cathedral when viewed from beyond that building. The height is 29 feet in this instance; usually it is not less than 10 feet. In some instances entrances have been made in later times at the ground level, but are readily to be distinguished from the original ones. The entrance to the tower always faces towards the church, where a church of corresponding construction is co-existent. The form of the door admits of only two varieties, viz. the circular arch and the flat head, and of these two the circular form is found three times for every one of the rectangular in forty-three existing examples. All openings, both doors and windows, have the jambs inclined, so as to contract the width of the opening at the top, and likewise both doors and windows have the jambs parallel in plan, *i. e.* without any splay, but many of the doorways have a reveal on the inside for a door;—in some cases means for securing the door by means of a bar let into projecting stone sockets; and this, it is to be observed, could only be used by persons who would thereby fasten themselves inside the building. In one case there is provision for two bars. The hinges seem always to have had iron hooks let into the stone in the modern way, but in almost every instance these hooks have been removed by violence.

Of the arched doors, that of Glendalough may be taken for an example as to size. It is 2 feet wide at bottom, 1 foot 9½ in. at springing, and 5 feet 8 in. high to the crown of the arch. Of the flat-headed doors, Lusk is 2 feet 1 in. wide at bottom, 19¼ at top, and 5 feet 11 in. high; and the variation from these dimensions in other examples is very slight.

In the interior the towers were divided into stages. In a few instances there is very little

* Read by Mr. Gordon M. Hills, at the Royal Institute of Architects, as elsewhere mentioned.

mark of these stages or floors left, but usually a sailing course of stone, or a set-off in the walls, formed a rest for the floor. Only three or four ancient floors remain, and three of these are formed by a very flat arch or dome rising less than a foot, and of rough stone grouted with mortar. The fourth is of slabs of slate: of its antiquity I am not certain. Taking seventeen examples of perfect, or nearly perfect, towers, we have six of them divided into eight stages, seven into seven stages, three into six stages, and one—that on Tory Island—into four stages; one tower, now imperfect, seems to have had nine stages. The ground stage, or stage below the door, is sometimes filled up to the door, but I think was never built solid so high as that: rarely it may have been so for 3 or 4 feet above ground. Mostly this story is vacant, and only one instance occurs of a light, which is a circular hole on the outside 6 inches diameter, and splayed on the inside to ¼ inch wide, with inclined jambs 9 inches high, and a flat segmental head cut in a single stone. The second, or door stage, has in a few cases a window over the door. The other stages, except the top one, have one window each, and the only rule followed in them seems to have been to place them at from 8 to 18 inches from the several floors; thus, from the small size of the windows, placing the upper part of each apartment almost in darkness. Instances occur rarely in which there is no window in a stage. In the upper stage of the tower are found two instances with eight windows, both of which, however, are not original, but have been altered to their present state. Of pure examples, two towers have six windows at the top, one has five, and all others have four; and these four face the cardinal points very nearly, but a distinct variation from that direction can be detected in one or two cases. In the form of the windows three distinct modes appear, viz. with semicircular heads, with flat heads, and with angular heads, such as in England are considered usually, though not always, to designate work of an age before the Norman Conquest, and we have sometimes a window which takes one of these forms on the outside, and another of them on the inside. When a window occurs over the door, it is the largest in the lower, approaching the door in size; otherwise the top windows, except in one example, are the largest. Those of Ardmore, which unite the arched and angular form in the head of three of them, are 1 ft. 5 in. wide at the sill, 1 ft. 2 in. at the springing, and 3 ft. 5 in. high to that point, the sills being 1 ft. 8 in. above the floor. The fourth window is flat-headed. These are a fair example for size and position of the whole. The windows in the various intermediate stages are smaller: 1 ft. wide at the bottom, 10 in. at the top, and 2 ft. high, will give a fair average, and placed, as before observed, very close to the floor, with very few exceptions. In only one example have we an enrichment on the windows, but many of the doors are more or less decorated, as we shall presently have to consider, and at the same time to see the manner in which the material is worked and used. The material is always that of the neighbourhood. In the north we have basaltic rock, granite, and whinstone and slate; in the central districts, limestone of various qualities, but always hard. I have seen nothing like our oolite stones. The only building I have seen of oolite is Killola Tower, which is constructed of a very hard dark grey stone, and stands on a rock of the same. There is one of the Towers in Mayo, of sandstone, although within the limestone district. In the south, sandstone is the prevailing material used, still we have towers situated amidst slate rock, and built of slate and granite used under similar circumstances. Where the native rock is not suitable for chiselled work, sandstone and granite have been used for the doors and windows.

The decoration of the doors is usually of a very simple kind. Of eleven with flat heads, only one has any ornament, which is a flat band or architrave, made to extend all round the door on its face, but apparently never finished. The others are, the most of them, of wrought masonry, but the beds not parallel, and the stones curiously notched and fitted together, and the remainder of rudely hammered stones. The walls of the towers are 3 feet 6 inches to 4 feet 6 inches thick, and it is not uncommon to find the jamb-stones go quite through the wall. The head and sill are each frequently in one through stone, 6 feet by 7 feet in length, and of proportional thickness. Of thirty-two arched doors, again, a large proportion are without ornament, viz. sixteen; the other half of them have, four of them, plain flat architraves, all round, as Kilree and another (Kell's Meath) differs only in having had a human face in relief on one jamb, and a small block left for carving on the other; another has the centre of this band architrave, sunk out, the sinking stopped at the springings and centre of the arch, and this arch is constructed with horizontal and not radiating joints. Aghavallie has the band relieved by a single groove, near the outer edge of the face. Cashel has the plain architrave on the face, and a plain blocking impost running through the doorway at the springing. O'Ruark's Tower, at Clonmacnois, has the impost and not the architrave. The first approach to ornament is in that of Rattoo, a very well-wrought doorway, with a plain architrave, and curious scroll, in very low relief, over the head. Donaghmore, Meath, is remarkable, and is one on which the advocates of a Christian origin have greatly relied to support their cause. It has the band architrave, with a bead on each edge, and a sculpture of the Crucifixion on the keystone with "human head on each jamb; making a total of ten to this class of architrave, with the round arch, as compared with one example only, to the flat head. The remaining five doors (Antrim, Dysart, Kildare, Timahoe, Ardmore) are shown on the diagrams. Antrim belongs to the first and largest class of the arched doorways, being only remarkable for the cross in relief over the head, and from the manner of the execution, evidently coeval with the tower, which is built of basaltic rock, and the door of large blocks of porphyry, well wrought. Dysart has the band architrave increased, to project 4 inches instead of only 1 inch, and it is moulded, and, except the sill and the head, is further enriched with pellets, or spherical ornaments, in the centre of the mouldings. This lower is wholly of sandstone, and the door is of a red sandstone of inferior quality, and has suffered greatly from time and violence. Kildare and Timahoe are extraordinarily rich with zig-zag and sculpture, all in very low relief, the capitals and bases of the jamb-shafts very peculiar. Timahoe is quite perfect, but Kildare has been greatly mutilated in the external parts. It retains, however, a feature peculiar to itself in the remains of a gable canopy over the head of the door outside, and which is unquestionably original; both are constructed of sandstone, which also enters largely into the construction of both of the towers. The last to be noticed is the doorway of Ardmore, which has merely a large bead, and rises on the angle of the jamb, and a flat projection on the face of the sill, in which some have thought two channels were caused by the wear of bell-ropes passing out of the door, and pulled from the ground. I believe they mark where it has been the custom at some time, to place a ladder against the tower for access to the door. This tower is remarkable for having round it three string courses (a torus each of them), and which do not correspond to the divisions of the internal stages. The apex is shown in several prints of the last century, with a cross or finial upon it; whatever it was has disappeared. The material of this tower is all a very good sandstone, wrought in regular ashlar, and in very good condition. Another singularity in this tower is that in several of the stages (which in most other towers are furnished with one or more rough projecting corbels, quite irregularly placed), the corbels are variously sculptured, and the whole interior of the tower is as carefully finished as its exterior. Another tower, which should now be specially noticed, is Devenish. The doorway has been already included in the four plain banded architraves. On the apex is a stone of a swelling shape, as if it were the base of a finial; and I have somewhere seen it described, by a writer of the last century, as then possessing an ornament which he likens to a crescent, and which was, doubtless, imperfect. At the base of the conical roof, where in all the other towers is a plain projecting blocking, or sailing course, we have here a richly-wrought band, with four human faces upon it. My diagram is taken from Dr. Petrie's book, and I believe his drawing was made some years ago, when a scaffold was erected to execute some repairs to the roof. It is impossible to speak too well of the execution of the masonry of this tower; it is wholly in sandstone of an exceedingly rich and warm colour; and, although the beds and joints are not parallel, and the courses consequently irregular, the whole is fitted together with the greatest truth and accuracy. The Tower of Swords yet retains on its summit a small plain stone cross, but not the original finial. About eighty years since the tower was very injudiciously repaired, and the present cross erected, but the old one taken down, and of which it appears to be the counterpart, is pointed out at the head of a grave in the churchyard. I have elsewhere, myself, observed in the churchyard the summit stone of the fallen roof, mortised, to receive a finial. To conclude the detail of the towers, we have only to notice Kinneh, which is hexagonal in plan to a certain height above the door, where the form changes to the usual cylinder, having the haunches at the angles of the hexagon finished by pyramidal weatherings.

The construction of the walls, as might be expected, depends greatly on the nature of the stone, and the facility of working it. It is in some cases wholly of rough stone, and uncoursed, whilst in others the stone, though undressed, is ranged into courses, and in these instances the material belongs to granite and other plutonic rocks. The greater number of towers are of coursed work, in which very large stones, chopped or chiselled to the curve on the face, but the beds and joints inmost. Near the base of the tower, it is not uncommon to find stones 7 and 8 feet long, and even more. This construction is usually of limestone, and the best example of it, showing great accuracy in the filling together of the work, is in the tower of Kilmacduagh: others are in sandstone, and a few in the harder rocks. Another class is where the stones are jointed as well as faced, but not brought to parallel beds and joints: examples of this are Aghadoe, Devenish, Cashel, and two or three others. A still more advanced style of work of ashlar, in squared courses, is found in Ardmore and at Clonmacnois. These two last classes are executed in sandstone.

In association with sixteen of the existing towers, or where there is undoubted authority for their past existence, I find churches exhibiting in their doors and windows and walling the same peculiarities as the towers. The doors are flat-headed, the jambs incline inwards; the flat band architrave is applied on the face. The windows are exceedingly small, and are flat, angle and round headed, but differ from the towers in being splayed inwards, most usually having an arched head on the inside, but sometimes a flat one. The jambs are inclined as in the doors. Where this character is wanting, I have met with nineteen instances of decidedly Romanesque church character, exhibited in the zigzag and other ornament common to the style which throughout western Europe arose with its present chief monarchies and divisions. The remainder of the churches belong to the era of Pointed architecture, which style I am inclined to think was not practised in Ireland till after the first introduction of the English, which took place in 1167. At this date Pointed architecture in England was just emerging into a distinct style. Salisbury Cathedral was not commenced till fifty-three years later. The Pointed arch had appeared in unison with Norman characters, as in Dunstable Priory, erected between 1131 and 1135, and was so used still later, as in the circular part of the Temple Church, which, as Britton shows, was dedicated in 1184.

Before this period, circular belfries had been erected in England. Of these a very good account was given to the Society of Antiquaries by Mr. Hudson Gurney, in 1829. He examined above fifty, chiefly in Norfolk and Suffolk, but saw others in Cambridgeshire, Essex, Sussex, and Berkshire. He finds them to be chiefly of Romanesque architecture, but also of the various dates of the Pointed styles. To only one does he assign a date earlier than the twelfth century. The curious circular turret at Brixworth is not mentioned by him,—it is earlier than any of his. There can be no doubt of the correctness of Mr. Gurney's conclusions that these towers have nothing in common with those of Ireland, except their rotundity. The English round towers are always attached to the churches, generally at the west end, opening to them by an archway, but there is usually no doorway in the tower. The windows are frequently numerous in each story. In these particulars there is no analogy, and the dimensions do not improve it: the highest of the English towers being only 56 feet, whilst the usual diameter exceeds that of the largest found in the Irish towers. In Scotland, however, we are presented with two examples precisely agreeing with the Irish towers. They are found at Brechin and Abernethy; both places are situated on the east side of Scotland, the most remote part from Ireland; both of them have been drawn, and descriptions published, at various times. It is now well ascertained that the Scots were an Irish people, who first established themselves in Caledonia during the third century of the Christian era. At the beginning of the sixth century, these Irish Scots raised their colony into a kingdom of small extent, on the western side of what is now Scotland, and, in 843, they finally mastered the Picts, and thenceforward held the sovreignty of the whole of the north of this island. It was not,

therefore, till 843 that the two places on the east coast where towers exist came into the possession of the Irish, and this may seem a reason for assigning a date after this period to these two towers; but it is by no means a conclusive one, for there had previously been a church at Abernethy, which was the metropolitan see of the Picts, and whence it was removed to St. Andrew's, by the first Irish sovereign, in 840. Still, that these two edifices are purely Irish can hardly be doubted, since it was from Irish missionaries, and from the great Apostle of Ireland and Scotland, St. Columb-kill, that the Picts had derived their Christianity; and it happens that in the Irish annals there is one case on record of a church at Apurcrossan (now Applecross, in Rosshire, as pointed out by Dr. O'Donovan), which was erected in Scotland, in 671, by an Irish ecclesiastic, of which there are remains to this day. Other churches were of course built by the same people, and it is likely other towns have existed. It was stated by a Mr. Hughes, in the *Builder*, in the year 1852, that others do exist, and he describes one at Dunrobin, in Sutherlandshire, but he is so evidently mistaken as regards the type of those he has seen in England, that I doubt if this one would not, on examination, prove to be of a different character and era.

To the Irish, then, it seems these towers are peculiar, and to Irish history must we resort for records of them. The mention of them in the Irish annals are few; they are there designated by a name which Dr. O'Donovan, and the best Irish scholars of this day, agree in translating "bell-house," although it has been attempted by advocates of the Pagan theories to give it a different meaning.

It is not necessary for me, and I am unqualified to do so, to enter into this question. I can only say that by the independent testimony of the earlier translations made from the Irish the word was understood to mean and was always translated "steeple," by those who had no theory on the subject to favour or maintain. Dr. Petrie has very learnedly demonstrated the errors of others and his own views in support of this interpretation, and has corrected the translation of other names of ecclesiastical structures which had before been involved in obscurity.*

A BUILDING LIFE SKETCH.

Scene—New Bridge-street. Time—Noon.

It was twelve o'clock, and the ring of the trowel
No longer was heard on the brick;
And the workmen all had deserted the wall,
Where they late were so busy and thick.

Cast from shoulders—a wide ell—the hod rested idle
On the wall where the mortar was drying;
And the mattock and hammer had ceased their clamour,
And around were confusedly lying.

For bricklayer, mason, and joiner had each
Himself to his dinner betaken;
With an appetite keen which needed, I ween,
No Burgess's sauce to his bacon.

Some sought the "Red Cow," some the "Barley Mow,"
And others the Bricklayers' Arms;"
As Barclay's, or Whitbread's, or Meux's "Entire,"
Had for each its particular charms.

I glanced around, and heard not a sound,
And I fancied that I was alone,
Till I happened to look in a darkish nook,
And there, on a block of stone,

Were seated, in life, a man and his wife;—
He scarcely grown out of the lad;
While she was fair, though with rather red hair,
And not very blithely clad.

And, this couple between, a delf basin was seen,
Into which they both were dipping:—
Potatoes a few, with a bone or two,
A crust of stale bread, and some dripping.

They spoke little and low, but their looks, I trow,
Told Love's unmistakeable story:—
O, a "dinner of herbs," which no strife disturbs,
Beats an alderman's feast in its glory!

'Twas a scene for Sterne (who'd for pathos a turn)
In a "sentimental journey;"
But (alas! for such) I've about as much
Sentiment as an attorney.

So I said (for deeds I greatly prefer
To words to express what I feel with)
"Here's twopence, old fellow!—go fetch thee a pint
Of porter to moisten thy meal with."

W. H. HARRISON.

* To be continued.

TOMB OF CASIMIR DELAVIGNE.——MONS. ABEL BLOUET, ARCHITECT.

PARIS FUNERAL MONUMENTS.

WE add to the examples already given in our pages, of monuments erected in France, a view of the Tomb of Casimir Delavigne, which is in the Cemetery *de l'Est*, Paris. It was designed by M. Abel Blouet, architect, and executed by M. Seurre.

APPLICATION OF STEAM-POWER TO BUILDING AT MARSEILLES.

THE following particulars respecting the application of steam-power to building, as exhibited in the cases of some magnificent houses now in course of erection on the Quai de la Joliette, at Marseilles, can hardly fail to prove of general interest.

The scheme, which comprehends nothing less than the building of an entire new town on the ground formerly occupied by the Lazaretto, adjoining the old town, is matter of notoriety. It is to be carried out by a company formed under the auspices of M. Mirés; the space to be covered consisting of 400,000 square mètres. We shall, however, confine our observations to a single block of houses, the building of which, by the application of steam power, is being pushed forward with a rapidity absolutely marvellous, and unattainable by any other means. The houses, which are of grand elevation, and which form part of a series of buildings intended to face the quay, were designed by M. Pigny, of Paris. The builder is M. Borde, a civil engineer of considerable railway reputation, under whom are employed MM. de Curel and Corso, architects, of Marseilles. These houses, which stand at the angle formed by the intended Boulevard des Dames with the Quai de la Joliette, are seven in number. They consist of five stories, each house having a frontage of seven windows. They cover a superficial area of 3,348 square mètres, being 108 mètres in length, and 31 in depth. They are built entirely of stone, with walls of great thickness. The ground being below the level of the sea, they are erected on piles, and under the whole are lofty cellars. M. Borde has contracted to finish them by next April, or in less than a year from their commencement; and he has no doubt of being able to fulfil his contract. It is by the application of steam power in a manner as novel as it is ingenious and simple, that he will be enabled to accomplish within this period a work which, in the ordinary course, would have occupied three years. Steam power was employed from the very beginning of the operations. 3,000 piles were driven in by pile-

driving machines, weighing 750 kilogrammes, falling from a height of 8 mètres, worked by steam. This was accomplished in twenty-three days.

The same power was then used to work up 3,000 cubic mètres of mortar.

The weight of materials to be raised was not less than 40,000,000 kilogrammes; and, as this was performed in *seven months*, the great weight of 190,500 kilogrammes has been raised daily to an average height of 15 mètres. Had this been effected by the ordinary process, the raising of the materials alone would have required 70 men on each stage, with the same number to carry and place. This labour, however, was performed by the same steam-engines which had previously been used to drive the piles and work the mortar. The following is the method of application. A railway is laid along both the frontages of the houses, with a turning plate at the angle: upon this runs a four-wheeled carriage with the engine and the raising machinery. The latter consists of a frame of light construction, 14 mètres high, terminating in a crane, which reaches to the tops of the houses. By this machine the materials are raised easily and rapidly, and deposited where required,—the stones *in the exact spot on which they are to remain*. It is calculated that the produce of 130 stone-cutters has thus been raised and placed daily. The machine runs to and fro on the railway, first serving one house and then another.

In addition to this engine there are two others fixed to wooden frames in the inner courts of the houses, which, by aid of lofty poles and the proper tackle, raise lighter materials of various sorts. The saving of labour thus effected in the raising of materials is said to amount to 65 per cent. By the aid of the electric light the men work night and day.

Let us add, that for all purposes of ordinary calculation, the mètre may be taken at 1¼ yard; the kilogramme as 2 lbs.

FATAL BOILER EXPLOSION IN THE CHURCH OF ST. SULPICE, PARIS.

THE following particulars have appeared in the French papers relative to the bursting of the hot-water apparatus on the morning of the 8th inst. in the Virgin's Chapel.

This chapel, spacious and lofty, is placed behind the grand altar, and is heated by two "caloriferes," or hot-water apparatus, placed at the entrance, one on each side, just above the steps: they are square pedestals, of cast-iron plate, about 5 feet high, and contain the water vessels necessary for its distribution. They are each surmounted by a figure of an angel, standing on a marble slab. The walls of the church into which the apparatus is built are cased with marble panels at these points.

At about eleven in the forenoon many were assembled at prayer, and the priest had hardly begun when the leaves of his book were blown about by some invisible agency—all currents of air having been provided against by closing the windows. This circumstance was noted by him and others, but he proceeded, and immediately afterwards the left-hand pedestal exploded horizontally, smashing the little pulpit, or reading-desk, to atoms, and rolling up the *débris* of the iron casing in the mat with which the floor was covered, along with the remains of three of the congregation. The pedestal and marble slab of the opposite side were struck by the fragments, and displaced, and some injury was done to the marble panelling. As soon as the stupor caused by the event had subsided, it was found that fifteen persons were thrown down by the hot water and fragments of metal: eight were without movement: two died immediately—females; one, a man, soon after; and the rest are so severely injured that one or two of them alone can recover.

The cause of the explosion is as yet a mystery. The apparatus was put up some years ago at the expense of 60,000 f. (2,400*l.*) and worked well ever since. Its erection was superintended by a committee composed of scientific men and architects. As soon as the inquest is published we shall learn the particulars of the explosion of one of those apparatus, with which so many public buildings are heated, and what measures the authorities take to prevent as much as possible the recurrence of the calamity.

CAMBRIDGE.—We are asked to mention that the Report of the Cambridge Architectural Society was wrong in the name of the architect of the new houses near St. Michael's Church. Trinity College suggested the style, and Mr. Whitaker carried out the suggestion.

A QUESTION FOR ALL.

OUGHT not judicious sanitary arrangement of human habitations to be compulsory, whether in cities, towns, or villages?

The question has been mooted, whether the drainage of London ought not to be a national undertaking; and as, in these days of rapid transit, the majority of Great Britain's subjects are interested in a wholesome focus, he would indeed be churlish who would grumble at being somewhat taxed towards the sanitary, if not the moral, improvement of our glorious metropolis. Such an advent would be but a step towards a national embodiment of an independent, unprejudiced staff, comprehensive in its detail, unswayed by local prejudices, and beyond the control of vested interest or close-purse parties, who, so long as they choose to maintain becoming dignity by due administration of the duties reposed in them, need apprehend no interference from the central board, which should be armed only to act when the local authorities shall have "left undone those things which they ought to have done." It is a great mistake to think that rural districts are less in want of drainage than London, and in proof of this I send you an extract from the *Devizes Gazette* of last week, by which it will be seen that the neighbourhood of Box Tunnel, on the Great Western Railway line, has given sad proof of what mal-arrangement in sanitary matters will produce. I bitterly feel the wicked determination of influential persons to continue the wholesale slaughter which, around me, has for years made the deaths double in number what they ought to be, situated as our little community is in a spot which would, under wise arrangement, be one of the most healthy in the world.

In the hope to find that you will not relax in the talented advocacy you have ever displayed to aid the nation's good,—I am, CHLORIDE.

"The vicarage at Box has (it seems by the paragraph referred to) been suddenly alarmed by the death of two ladies at the vicarage, viz. Mrs. Hurlock, wife of the Rev. Dr. Hurlock (the vicar), and her sister. Four of the domestic servants were seized with symptoms similar to those which deprived the ladies of life. All six were ill at one time, but the servants have recovered. The two medical attendants—gentlemen of eminence from Bath—and a talented surgeon, who made *post mortem* examination, agreed in their evidence, that the deaths had arisen from gastric fever, caused by some malaria in or near the house. The jury recommended that Dr. Hurlock would make a searching examination of the drains and water-courses of his house and premises, and that the same investigation and inquiry should be made as to the church-yard, and a report sent to the churchwardens and other proper authorities as to the propriety of discontinuing to bury the dead there."

ON THE ORIGIN AND PROGRESS OF EXPRESSION IN THE MONUMENTS OF ARCHITECTURE.*

I FEEL that I owe some explanation for once more offering myself to deliver a lecture from this place to such an assembly. My more fitting position is rather in the class-room of my college with my young friends around me, and explaining the first elements of my art. But here I have to submit a technical subject to a mixed auditory,—to treat on matters as well, if not better, known to many of those whom I now see before me. I wish to follow a new and perhaps a questionable analysis, in which I may be obscure to some and justly differed from by others. It will be found to be, I believe, a new point of view, from which to consider the oldest, and I trust I may be permitted to say, the noblest of the fine arts. For is not every monument a page of history?—Does not every ruin speak to us of the genius and noble aspirations of the past?—Is not architecture an eloquent and impressive interpreter of a nation's religion, its taste, its civilization, its scientific status, its power and magnificence?—Does it not call in the aid of the twin sisters, painting and sculpture, to ennoble its forms and adorn its surfaces?

Such is the nobility of my theme, that I must crave the indulgence of your patience and forbearance, as I attempt to trace some of the hidden mysteries, the inner life, which dwell in the monuments of all ages, the moral characteristic beauty of Coussin ("Du Génie de l'Architecture," p. 16), reflecting the workings of the soul of the artist, and appealing with irresistible influence to the feelings and impressions of the beholder, who is often unconscious of the source of those impressions that elevate his thoughts, charm the sense, and hold his feelings in wonderment and delight.

* The following paper was read by Professor Donaldson at the Architectural Exhibition on Tuesday, the 12th inst. Henry Thomas Hope, esq. took the chair, and briefly introduced the lecturer.

ON THE ORIGIN AND PROGRESS OF EXPRESSION IN THE MONUMENTS OF ARCHITECTURE.

It is a humiliating and discouraging circumstance, connected with architecture, to consider, that after nearly forty centuries of experience, with the finest examples before our eyes of all epochs and of all countries, we are still at sea as to principles of taste; and that our public buildings are confessedly inferior to the finest monuments of antiquity. Is this deterioration a portion of the curse inherited from our first parents, "one of the infirmities that flesh is heir to?" And so short-sighted are we in our aims, and so narrow-minded in our prejudices, that but few have largeness of souls sufficient to appreciate and to admire "*pro tanto*" all styles of all countries.

In order to understand the progress of architecture and contribute to its development, it is necessary to embrace a wide and extended view of its operations throughout the world, and to be acquainted with its noblest works,—to take our stand on an elevated spot, as it were, and to scan with philosophic eye the whole range of the past in one glance. If we confine ourselves to one period, or nation, or race, or empire, our narrowed vision will comprehend the workings of only a limited time and space. But, if we look abroad and let our observation expand itself to all times and all countries, we shall see the influences at work in the widest sphere of human intelligence, and ascertain to some extent the world-wide march of progress in harmonic beauty and physical unity, that has been made in our art. For each previous period has influenced more or less the preceding one, and each style has had its infancy, its youth, and its decay. Thus, step by step, has architecture developed its latent claims and powers from its faintest glimmerings in Egypt and Nubia to the superbest of its creations in North-Western Europe.

EGYPTIAN ARCHITECTURE.

To appreciate this style I must first lead you to the Banks of the Nile as high up as Thebes. We must there penetrate into the rock-cut galleries of the tombs of the kings in the valley of Biban-al-Molook, with their richly-decorated walls and ceilings, their noble halls rich in varied embellishments of elaborate art, with their stupendous and costly sarcophagi of alabaster granite or basalt. Or we will contemplate together the rock-cut temple tomb of Rameses at Aboo Simbal, so well illustrated at the Crystal Palace, with its four colossal seated figures 65 feet high, from its stupendous façade of gigantic proportions, and its inner vestibule and halls, as of a subterranean palace, with the superb decoration of its surfaces and solemn, mysterious gloom. And, thence let us again descend to Thebes and land on the flight of steps, which lead by an avenue of sphinxes up to Luxor with its stately propylon or entrance-gate, its vast courts, and halls, and porticos, and temple, and gardens, fit to be a wonder of the world, were not its glories, its vastness and nobility surpassed by the Temple of Carnac in the adjoining quarter of Thebes. Both temples were united by a dromos or causeway 60 feet wide, a mile and a quarter long, lined on either side by sphinxes, those monstrous creations of the wildest superstition. And here we enter the sublime portal 350 feet long, 180 feet high, the mere wall in front of the fane, and then we proceed through a court lined with colonnades; and, traversing another of these gigantic portals, pass through a hall of eighty-one columns, the central avenue of which has pillars nearly 11 feet in diameter. To the right and to the left there were monolithal obelisks, 80 feet or 100 feet high, and sedent or erect statues of deities or kings or heroes 30 feet to 50 feet high. You then approach the full blaze of the front of the fane itself uprising with majestic dignity on one side of a court, whose columns tend to enrich, but not to eclipse, the grandeur of the Temple, in which profusely-decorated columns, walls and ceilings, shining with azure, green, red, yellow, and gold, almost bewilder the beholder. But the worshipper enters the solemn gloom, which presents itself within:—the dimly-obscured light—the mysterious solemnity and colossal size of all around—strike him with awe; and the thick walls and masses of the ceilings impress him with a religious wonder and veneration for every strange object in whose presence he stands and before whom he shrinks into nothingness. The very monstrous

statues, with heads of hawks, cats, and other animals, speak to him of another world of creation, and strike a terror into his soul, combined with the grandeur and majesty of the architecture. The whole mass of building is made up of straight lines, and not a curve exists, but in the cylinders of the columns. All is rigid, ponderous, and overpowering, and massive in its contruction: its æsthetical qualities are gloom, rich decoration, mystery, and idolatry; its sentiment superstitiously religious.

GREEK ARCHITECTURE.

The individual character of the Greeks had a development essentially different from that of the Egyptian: they were naturally of a more lively and joyous temperament, the result of their free institutions. It is difficult to trace the origin of their theogony. The gods of Olympus are the spiritualised embodiments of the virtues, the passions, the wants, or the acts of men. Pindar and Homer among the earliest of the poets seem almost to create their own gods; who were adopted by the people, and thus got confirmed in the reverence of succeeding ages. There is not a river or a fountain, a mountain, a valley, a plain, or a wood, which has not its tradition and peculiar divinity. And this ideality pervaded not only natural objects but all works of art, and essentially their temples, which abounded in the production of the painter and sculptor, as well as being the highest effort of the architect. Their exquisite susceptibility and their intellectual intelligence caused them to refine in all their sciences to the utmost degree, so as to correct with great subtlety optical effects. Thus in the Parthenon every line horizontal or vertical is partially curved —there is not a straight one of any length throughout the building. The brilliant effect of the natural whiteness of marble did not satisfy them, and they covered the surface with various tints, now delicate, now of deeper tone; and introduced elegant enrichments with the richest colours and even gold itself—nay, the colossal statue of the goddess was of ivory and gold with parts highly coloured:—their psychological tendencies demanded more than the mere architectural features of the columns, the entablatures, the beams and ceilings, the portals and bronze gilt railings. The architecture became the framework of the most exquisite productions of the sculptor. The metopes, the friezes, and the tympana of the pediments glowed with the sculptured groups, which recorded the birth of Minerva, the contests before the gods of Olympus between Minerva and Neptune to give a name to the city, or the combats between the Minotaurs and Lapithæ, the Amazons and Athenians, or the labours of Hercules. Everything was gay, brilliant, and attractive, and imbued with art. The vases buried in the tombs with the dead, the tombs themselves, the commonest utensils of life, the armour of the warrior, the cups and the tazzæ of the banquet were instinct with the purest forms and most exquisite compositions — but mostly recorded the myths, which had taken a vigorous hold upon their lively imaginations—and the Ναὸς or cella itself was considered as the habitation for the deity rather than intended as a receptacle for the worshippers. With very rare exceptions, the temples of the Greeks were of inconsiderable size Their importance in their eyes consisted in the purity of their form and their elegant adherence to recognised types. But they were seldom of the gloomy or solemn religious character, which is the proper characteristic of the Christian place of worship. All was generally gay, cheerful, and brilliant. As Grote says (Hist. of Greece, vol. iv. p. 72): "Each city and every village had its peculiar religious festivals wherein the sacrifices to the gods were usually followed by public recreations of one kind or another—by feasting on the victims, processional marches, singing, dancing, or competition in strong and active exercises," and I may add dramatic representations. (Dr. Smith.) To keep the temple separate and distinct from the vicinity of profane objects, it was situated within a precinct of greater or less extent, as the case might be, and surrounded by an enclosure, the entrance to which might be by a magnificent propylæa. Frequently it was surrounded by a sacred grove, and besides the temple itself, there were other consecrated buildings, as chapels, treasuries, &c. and the cella itself was generally crowded with votive offerings of the most exquisite and costly nature.

Sturdy columns and thick walls gave an enduring stability to the construction, which, as it consisted of horizontal beams that threw the weight vertically on the points of support, would have ensured an eternity of duration, had not the fury of conquerors or the heedless destruction of the despoiler involved them in ruin.

The same refined taste accompanied the Greek, wherever he went and formed colonies. Along the coast of Asia Minor, in Sicily, in Southern and Middle Italy the wandering Greek bore with him the arts of the mother country, and still carried them out in their new race with the like skill and the like success.

ROMAN ARCHITECTURE.

The transition from Greek to Roman art is less abrupt than that from Egyptian to Greek. There cannot be a doubt, but that the commercial and military intercourse of the two must have influenced the Greek mind. The Egyptian was earlier in perfecting the arts of civilization. We have monuments in the valley of the Nile of the highest perfection long before the date of any known Greek example. All their forms had been then matured and the most brilliant pigments, laid on with refined taste, gave expression and splendour to the architectural features. We may therefore conclude that, in point of decoration at least, the Greek owed much to the monuments already existing in Egypt. But there was a wide difference between the essential character of the architecture of his own country and that on the banks of the Nile.

A more intimate relation existed between Greek and Roman architecture. The Greeks had their offshoot colonies established in Etruria and Metapontium, the middle and south of Italy. So that Italy before the Romans had its cities at Pæstum, whither the Greek had transplanted his customs and his arts. These guided the crude and early productions of the ruder Roman; and served as his types and bore their impress upon all the future development of the Roman taste. It was the Roman translation of Greek art, modified by the tastes and wants of the people, who had adopted it, and yet sufficiently characteristic to constitute a style apart.

The martial spirit of this young people, and even the consideration of their own safety, led the Romans to subjugate the adjoining states, and to extend their conquests far abroad. Amid various reverses they still remained conquerors, subjugated foreign provinces, brought home vast spoils, received considerable tributes, enriched their monuments with the works of art of which they despoiled Greek cities and monuments; and anxious to excel in the grandeur and pomp of their buildings as they did in arms, they spared no expense, and imported all the choicest materials, the products of foreign lands. Thus their monuments became gigantic in scale, vast in extent, profuse in ornament; but less refined in conception, less pure in execution than those of the Greeks. Their temples, their fora, their theatres, amphitheatres, circi, basilicas, triumphal arches, commemorative pillars, the palaces of their emperors and nobles, and their thermæ, were not limited to the mere purposes of use and convenience. They were raised to a *monumental* importance, they were made the more splendid to gratify the *senses*, and their *decoration* served to display the vast wealth which poured into Rome from foreign conquest. Emperors, consuls, and pretors all sought to leave the impress of their name and deeds to posterity, and by rendering Rome the magnificent capital of the civilized world, to buy the golden opinions of the people. Rome was a city of palaces, a *pompous* group of superb buildings. Display contended with use—for usefulness was also one of the marked characteristics of the Roman mind, as we see in their fora, their thermæ, their aqueducts, their public roads, their bridges, and their ports. The same nobility and spirit of usefulness attended all their operations, as well abroad in their distant provinces, as at home in Italy itself. If the traveller visits even Athens, he finds monuments of Roman munificence: if he goes to Syria, he is struck by stupendous remains, as the temples and cities of Balbec and Palmyra; and in the rocky defiles of Petrea,—

> "Where rose the gorgeous sepulchre, and where
> Some fairy palace hung its roof in air;
> And Roman arts with Roman arms arose."
>
> *Burgon's Petra.*

Along the northern coast of Africa, on the banks of the Rhone in Gaul, as at Arles, Vienne, Nimes, and Orleans, and in remote Spain, ruins of stupendous aspect, vying in importance as to size, destination, and construction, with those of the imperial city itself, show that the noble-minded Roman imbued even the inhabitant of his distant possessions with the same grand ideas of magnificence and the like enlarged notions of public utility.

It is to be remarked, however, that their temples did not impress the worshipper with the religious awe which results from distant vistas, solemn effects of chiaroscuro, and intricacy of parts; but rather from majestic simplicity, a certain vastness, and a profusion of costly sumptuous material.

This vastness pervaded all their monuments, and when one contrasts the "*Thermes*" at Paris, or the antiquities of Trêves, with the modern architecture around, they convey an imposing evidence of the simple grandeur of the Roman monuments.

This vastness also necessitated scientific means to attain its end. Hence the vaulted principle brought into general use in the Pantheon at Rome, and the halls of the public baths, and other gigantic erections, where we hear of areas 80 feet wide spanned by vaultings; and hence the thick and solid walls constructed to uphold these cylindric roofs carried in mid-air.

I cannot more emphatically conclude this hasty review of Roman architecture, than by quoting the words of Mr. Fergusson, in his admirable "Handbook of Architecture," vol. i. p. 298.:—"The Roman buildings display far more evidence of wealth and power than of taste and refinement, and all exhibit traces of that haste to enjoy, which seems incompatible with the correct elaboration of anything that is to be truly great. Notwithstanding all this, there is a greatness in the mass, a grandeur in the conception, and a certain expression of power, in all these Roman remains, which never fail to strike the beholder with awe, and force him to admire in spite of his better judgment. These qualities, coupled with the associations that attach themselves to every brick and every stone, render the study of them irresistibly attractive. It was with imperial Rome that the ancient world perished: it was in her dominions that the new and Christian world was born. All that was great in heathendom was gathered within her walls; tied, it is true, into an inextricable knot, which was cut by the sword of the barbarians, who moulded for themselves, out of the fragments, that polity and those arts which will next occupy our attention. *To* Rome all previous history tends: *from* Rome all modern history springs: to her therefore, and to her arts, we inevitably turn, if not to admire, at least to learn, and if not to imitate, at least to wonder, to contemplate a phase of art as unknown to previous as to subsequent history; and, if properly understood, more replete with instruction than any other form hitherto known. Though the lesson we learn from it is far oftener what to avoid than what to follow, still there is such wisdom to be gathered from it as should guide us in the onward path, and might lead us to a far higher grade than it was given to Rome herself ever to attain."

EARLY CHRISTIAN.

During the three first centuries of the Christian era, Roman art had risen to perfection, had passed through a period of wild search for novelty, and, consequently, coarser impressions; and at length, from political struggles from within and without, Rome itself had reached its lowest deterioration under Diocletian, although still retaining some features of impressiveness and grandeur, not altogether eclipsed, the inheritance of past ages of noble and refined taste.

During this period a new impulse, a higher and more truly glorious principle, instinct with the purest morality and highest aspiration, was making progress with the people. St. Paul's impressive teachings had not been without fruit. Christianity counted its thousands among the people. Let us imagine ourselves in the Campagna of Rome, amidst all the funereal pomp of the proudly-rising tombs of the Romans, we see scattered groups of serious individuals approaching from all sides, and cautiously passing on, are lost in some obscure alley. They are families of Christians, who come to worship near the tombs of the early martyrs. In one of the dark recesses is a descending path, which, with winding steps, leads through dim turnings, and the daylight, entering in at the mouth of the cavernous vault, somewhat illumines the first part of the way; but the darkness grows deeper as the worshippers advance, till they meet with shafts cut in the roof of the passages, admitting light and air from above. Long subterraneous galleries pursue their courses into the very heart of the solid rocky foundation of Rome itself, excavated by the labour of man to abstract the Pozzolana, or furnish materials for the gorgeous constructions above. These gloomy recesses are now the refuge of the persecuted—the tombs of martyrs and saints—the churches of the living. The sides of the galleries were cut to form recesses which received the bodies of the dead, and thus preserved the crumbling remains. Slabs closed the orifices, and were in-

scribed to record a name or a pious ejaculation. The emblems of Christianity—as the cross, the palm, the dove, the ship, &c.—are cut in the face of the rock, and rude sculptures and paintings of religious subjects were the decorations of the sacred architecture of the Catacombs of Rome—a troglodyte temple and tomb, enshrined by the simple *devotional* affection of the persecuted victims to the rage of the Roman emperors and Roman people.

But a happier epoch opens upon these sufferers. In 323 Constantine, the Roman emperor, embraced the Christian faith, erected places of worship, or converted old buildings for the purpose. Transferring the seat of empire to Byzantium, a new and an unfettered world opened to the artist. Greece and Rome became fused into one. The sites of ancient cities which had been laid waste, the remains of the noblest monuments of antique art that were in ruins, were ransacked for materials. Basilicas, baptisteries, and other edifices, sacred and profane, were carried up with indiscreet haste by men who were rather artisans than artists, and who relied for their decoration upon the pillars, capitals, friezes, and other ornamental features, ill-assorted, which they gathered up from the materials of old buildings. Hence resulted a style which, from that circumstance, we may call Materialistic. The horizontal line was still the predominant principle, and the semicircular arch, as seen in the Palace of Diocletian, at Spalatro. Devoid of the powers of originating, these rude artists looked back to the works which had preceded their time for guidance and suggestion. It was a fragmental architecture,—sometimes rich, from the insignificance of its detail; occasionally it rose to solemnity, from the vastness of its pile; and now and then had an air of dignity, from the associations in the mind, excited by the magnificent columns and marble with which these edifices were occasionally erected, as Sta. Sofia and St. Paul's without the walls at Rome, from the *débris* of the pompous buildings of antiquity.

This style, if style it may be called, assumed the name of Byzantine, and has also been called Romane and Romanesque. Its chief seat was Constantinople; it reached to Lombardy, and there assumed a distinctive expression; and it had its development in Germany and the south of France, with various peculiarities of character, due to the country in which it was practised. At one time the purely Greek type assumed the form in plan of the equal armed cross, apsidal terminals at the east end, domes crowning the central crux and the ends of the arms. The interior, devoid of architectural cornices, bands, or mouldings, had its vaultings brilliant with mosaics and the walls with paintings—the subjects scriptural, and every portion, according to Mons. Didron, bound down by a strict conventional canon of ecclesiastical art. The Roman, or Western type, generally assumed in plan the form of the ancient Basilica, with its three or five aisles, divided by rows of columns torn from ancient buildings. At the east end were generally apsidal niches, the central one the largest, and its dome enriched with mosaics also, and filled with the head or figure of the Saviour or Creator, and sometimes with groups of the Apostles and Evangelists.

In the North of Europe an immense modification took place; and here the Byzantine type, with its semicircular arch, merged into the Saxon and Norman, such as we see at St. Alban's or Durham, or in the glorious churches of William the Conqueror at Caen.

The column still retained its ancient division of base, shaft, and capital of antiquity, somewhat of the Doric or Tuscan cast, but more ponderous in its proportion. The entablature, frieze, and cornice of the Greek and Roman canon ceased, and were lost entirely; and arch sprung from capital to capital, and spanned the space between each column; and arches rose upon arches, two and sometimes three tiers in height. The doorways were profusely decorated with columns and recesses and vaulted headways; and windows also received a little enrichment, but less profuse. The façades were often adorned with tiers of columns, arcades, and apertures profusely elaborated, and were surmounted by the pediment end of antiquity, but with outlines of continuous cornice. A profusion of sculpture with personages of holy writ, and occasional statues of emperors, kings, or heroes, completed the imposing elevation of the entrance front.

This was the acme which Christian art had then attained, still retaining some of the features, and still guided by some of the elementary rules of the antique. The dome remained in Byzantium and in Greece, and was occasionally seen in the more northern parts of Europe, as at Venice in St. Marc's, and in Western France, as at Perigueux, and the immediately neighbouring provinces. It never appeared in Germany, in the North of France, nor in England; but the Norman buildings retained the horizontal tendency, the semicircular arch, and impost moulding, and the solid construction of the Classic periods. With the twelfth century, however, passed away all affinity between the architecture of the Old World of Art and the New.

POINTED ARCHITECTURE.

Never in the history of architecture has occurred so abrupt a change as took place towards the end of the twelfth century. Within the short period of about thirty years a distinct and peculiar style superseded the previous one. The pointed arch instead of the semicircular; the lancet window instead of the somewhat squarely proportioned one of the Norman; acutely-pointed vaulting instead of the cylindrical; piers, consisting of small shafts, frequently detached, in lieu of the solid pillar before in use; instead of flat buttresses, boldly-projecting ones, topped by lofty pinnacles, and often carried with a flying arch from the wall of the clearstory to that of the side aisles—a structural expedient to resist the thrust of a more daring construction; a new assemblage of mouldings, and, with profiles, more widely differing than those of Greece and Rome. Every feature had a vertical tendency, upshooting, as the pious prayer of the worshipper, heavenward—instead of robust proportions, light and airy forms. Whence sprang this new light of art, this advance into a new field of expression and sentiment? The last was a retrospective glance to ages past; this was an aspiration for progression onwards to new sensations. Was it a natural inspiration of the artist's mind? or did it arise from a suggestion derived from external sources? The question has been handled with much ingenuity by many gifted writers—as Thomas Hope, Dr. Whewell, Professor Willis, Milner, Rickman, and De Caumont—who have variously attributed the origin of the style to the intersection of groinings in cylindrical roofs; to the form produced by overhanging trees in avenues; and to its having been introduced by the Crusaders on their return from the East, anxious to commemorate their sufferings, their sacrifices, and victories in the Holy Land, by transplanting to the buildings of their own countries so distinctive a feature of the native architecture of Palestine as the Pointed arch of the Saracens, and thus perpetuating impressions which they held most dear. I shall not enlarge upon this curious topic further than by noticing the remarkable contemporaneous coincidence of the Pointed arch and the Crusader, and of the general influence which the latter had upon the arts, the sciences, the manufactures, customs, and manners of the European nations, as has been well observed by Monsieur Guizot, in his "Histoire de la Civilization Européenne." Once, then, the minds of the artists were turned in a new direction, and every effort became progressive; arched construction assumed also a new development in the high-pitched vaultings of the nave and side aisles, and numerous intersections, conveying impressions of lightness and elegance. Instead of the square tops to the towers of the Normans, they were finished with lofty sharp-pointed spires, with crockets on the ribbed edges, to break the monotony of the outline; and the gables also rose high up to a more acute angle. Salisbury and Westminster Abbey are the happiest and most complete instances of this style in England, with the west front and towers of Lincoln. And in the north of France, also, there are numerous elegant specimens of the Lancet or Early Pointed style.

The same change took place in domestic as in ecclesiastical architecture; and although hardly an instance occurs of a house of the lancet period in this country, there still remain specimens of them abroad.

For seventy or eighty years this style was vigorously carried out in England, and the numerous examples given in Mr. E. Sharpe's admirable work of parallels show how rich and varied were the applications of it to the buildings erected during the thirteenth century. But the thirst for something new, and the vivid imaginations of the architects of the period, produced a further expansion in the erections of the thirteenth, fourteenth, and fifteenth centuries, which my subject compels me to condense under one head.

THE OGIVAL.

It would require several lectures, and each one full of instructive matter, to analyze the peculiarities of the several steps in artistic decoration of the several divisions into which writers have classified the movements of these three centuries, as the Decorated, the Tudor, the Perpendicular, the Flamboyant, and the like phases of English and foreign Gothic.

The apertures of windows, hitherto simple openings, were now subdivided into several lights, and the heads were filled in with a tracery, flowing, fanciful, and intricate. Richly-sculptured cornices were introduced, and tracery-pierced parapets above. Elaborate panelling covered the faces of the walling inside and out. Niches became more abundant, and decoration more profuse. Each distinct object and feature had its own ornamentation; and the very furniture was not deemed unworthy of artistic treatment. Glorious combinations of buildings were carried out to the utmost extent of splendour and convenience.

> Hail, countless temples! that so well befit
> Your ministry; that, as ye rise and take
> Form, spirit, and character from Holy Writ,
> Give to devotion, wheresoe'er awake,
> Pinions of high and higher sweep, and make
> The unconverted soul with awe submit.
> *Wordsworth's Ecclesiastical Sonnet*, ix.

Cathedrals had their baptisteries, chapels, sanctuaries, choirs, screen, treasuries, chapter-houses, and cloisters. The convents and monasteries their abbot's dwellings and cells, or rooms for the monks or nuns, refectories, libraries, strangers' quarters, courtyards, and extensive precincts. The palaces of the sovereign and princes, the houses of the nobles, and dwellings of the middle classes, the hospitals; nay, the very barns of the priesthood reflected the like feeling for art. The town-halls of Belgium, with their glorious towers or spires, show how universal was the feeling, and that buildings—municipal, charitable, domestic, or commercial, were designed and carried out with all the like regard for magnificence as was revealed in sacred edifices. The example of the priesthood had a teaching influence in the ordinary objects of life, as well as in things spiritual. Art was a necessary enjoyment—not a vulgar caprice—but a refined, enlightened, and elegant necessity, in which all classes combined, as in the best classic periods; and as then, and at this time, no monuments which have come down to us of any moment, betray vulgarity, commonness, or a rash departure from the accepted canons of taste, that were then considered essential to high art.

TYPES.

From the earlier, but not in the earliest ages, the imaginative churches of the south of Europe transferred, or rather expanded, the spiritual typism of the mysteries of the faith into the material circumstances of its ritual, its services, and even of its buildings. Each successive age added something, until at length, as we see in the "Rationale Divinorum Officiorum" of the fanciful Durandus, by the "Catena Symbolica" of the Rev. J. Mason Neale, and in the works of M. Didron, typical symbolism assumed its apogee in the ogival period. The piers of the cathedral, and the doors, symbolized the Apostles; the windows, the Doctors; the columns, the Bishops and also the Doctors, who upheld the fabric of human invention. The form of the plan assumed that of the Cross of the Redeemer's sufferings, with the upper arm diverging on one side, to imitate the inclination of the head of the Saviour, at Whitby; the nave represented the body of the faithful—the ship of salvation; the chancel, with its altars and choir, the Holy of Holies; and in the eyes of the worshipper the crypt was, as it were, the confessional of the sanctified martyr: the very figures of the gurgoyles had their meaning;—in fact, there was no object which had not its sacred signification, even to the vestments of the priests, and the colours of the altar-cloths, of the robe of the Virgin. The imaginative fancy of the lively Greeks commenced the spiritualistic tendency, and it was readily seized upon and enlarged by the Western Church.

And another pleasing element the genius of this period admitted into its graceful imagery of expression—the Roses of the Plantagenets, the Lion of England, the Thistle of Scotland, and the Shamrock of the Sister Isle, the portcullis of Henry VII. and a thousand other devices of baron, priest, and knight, were interwoven with the flowers and leaves of the sculptured enrichments. The rebus of Islip, Wheathamstead, Ramridge, Shelton, Bolton, and other names, had their emblems modelled in the brick, or carved in the stone or wood, and gave a vivid, practical expression to the homes of our fathers, the tombs of the illustrious and wealthy, or the sanctuary of the worshipper, in whose eyes the lily was the special emblem of the Mother of the Saviour.

EQUILIBRATION.

In the structural arrangements of this last period the science of construction had assumed

a daring almost presumptuous. The nicest calculation approached as nearly as it could to the impossible. Vaults of lofty proportions spanned immense widths, themselves pierced by intersecting arches, and the lines of solid bearing lost in the multiplicity of feature. The roofs were upheld on the slenderest piers, the walls being perforated with broad apertures for a blaze of light through the thousand hues of the glorious painted windows. Equilibration was the touchstone of the highest excellence, and the apparently tottering and insecure fabric was maintained in mid-air by a power that did not itself appear to the wandering beholder from within. But on the outside the series of solid buttresses were carried down, apparently for artistic purposes, to break up the monotony of the mass, as in the pile of King's College Chapel, Cambridge, or in the glorious towers of Somersetshire, covered with tracery panels, niches, and sets-off, and weatherings; or flying off in graceful contours for the apsidal ends, as at Notre Dame, Paris, and Cologne Cathedral, with crockets, finials, and fanciful penetrations, trifling, as it were, with the duty they had to perform. The bishops were not disheartened, nor the architects or builders dispirited by the ill success of their first efforts. Twice did the roof of Beauvais fall to the ground. No faint heart for such work as this. Each time it was restored with greater hardihood of conception, till the third time it stood, and now stands a miracle, rather than a work of man's creation.

Equilibration attained its acme of perfection in the fair traceried ceilings of King's College, Cambridge, of Henry the Seventh's Chapel, Westminster, and of St. George's, Windsor, and in scores of our sacred edifices scattered throughout the land, without a rival or equal on the continent. There it seems to have been unpractised. The equipoised arch rising from its vaulting shaft, stretching across with its main rib, which serves as the spire to the crafty combination, with its domical arrangements, and its pendentives, and its panellings, and its horizontal and radiating ribs, enwrap the attention, and bewilder it almost with the variety and charms of its magic poetry of construction, the keystone of which is equilibration.

The architects of the Middle Ages, from the twelfth to the fifteenth century, for a period of 300 years, during which the Pointed style reigned, seem to have been guided by a wild enthusiastic impression of beauty peculiarly their own. Amidst so many creations, that convey the sublimest and most graceful impressions, the reason cannot but recognise the most opposite intentions and results, as though the imaginative faculties of those artists had been carried away by a wild uncontrollable instinct, which they had not the force to regulate. The pillars and supports, made to lose all appearance of solidity by being cut up into multiplicated shafts, presented long, deep, vertical lines of shadow. Columns, abandoned as an apparent principle of upholding strength or support, were degraded to a mere ornament, drawn out into thin wiry shafts, with an insignificant base and an unimportant capital. Breadth was entirely effaced by covering the surfaces with panellings and divisions, so that the eye had no repose. There was an eager desire to banish every semblance of solidity and strength, by diminishing the thickness of the walls, or reducing every appearance of depth. All the elements of obviously sound construction, as the grand aim, being set at naught, a daring reduction of necessary supports, and the introduction of a doubtful system of counterpoise, leave too many of those noble structures, menacing ruin, or necessarily kept together by iron ties, as our own Westminster Abbey, or upheld by huge projecting buttresses.

There are many monuments of classic antiquity —as, for instance, the Pantheon, Rome,—which have survived the crushing efforts of past times to destroy or appropriate, the neglect of centuries, the corroding influence of weather, and the spoliating spirit of ruthless vandalism. But too often the noblest of our cathedrals, under all the fostering influences of care, religious zeal, and unbroken occupation, and instant reparation, present rents and fissures, threatening ruin—less from decay than from inherent vices of original construction; so defective was their system of wood framing, and so unsound the principle of stone construction, carried to the very verge of tottering stability and unsoundness, which the slightest neglect or casualty might overturn. It was an epoch of impetuous instinct, abrupt resolution, uncontrollable taste, and disregard of the matter handled. Yet there is so much of loftiness, grandeur, and extent — such a bewilderment of the senses by multiplicity of beautiful parts and divergencies of lines, crowding of ornament, luxury of decoration, and vastness of conception, that the mind is entranced by the glorious profusion of effects, and cannot stop to analyse its sensations, and reason is lost in delight.

Neither intellect, nor energy, nor daring, nor imagination, nor skill was wanting in the works of those ages. For a long time they were deprived of their due appreciation. They have in our own times been praised to excess, and as unreasonably decried. In fact, the architecture of the Middle Ages succumbed to that want of fixedness of principle, which created an appetite for novelty and continued variety of change; not so much a perfecting as a superseding of an established style of taste.

I am thus arrived at the conclusion of the main topic of my theme. It would be useless now merely to glance at the ultimate decline of Mediæval, and the revival of the (quasi) Classic taste. Still more perplexing would it be to attempt to dive into the chaos of our own century, and delineate glimmerings of light in the dense mist that surrounds us. But I claim permission to trespass further for a moment upon your indulgent patience. I have endeavoured to render due homage to the genius of all periods and of all countries. The Fine Arts have been ever considered as arts of peace; but at this time the attempt is made to render them arts militant, and to range in hostile array the Classicists and the Mediævalists. Instead of brothers we are to be intolerant rivals, and to produce this a certain tone is assumed of dogmatic severity and bitter depreciation. Is it generous to foster hatred between the followers of the two ideas? We cannot always be reciting our penitential breviary, nor ought we always to be giving way to mirth and pleasantry. And so in architecture; may not the two movements of the mind find their apt responses and representatives? And may we not be allowed, without the suspicion of heresy, to be religious with the Mediævalist apart from his bigotry and superstition, and sumptuous, gay, and free with the Classicist without his pedantry and heathenism?

EPOCH.	STYLE.	ÆSTHETICS.	SENTIMENT.	CONSTRUCTION.
		HEATHEN.		
B.C. 2000 to 100	Egyptian.	Idolatrous. Gloomy. Mysterious. Richly Decorated.	Religious.	Ponderous.
500 to 100	Greek.	Refinedly Ideal. Intellectual. Psychological.	Mythological.	Stable.
200 B.C. to 300 A.D.	Roman.	Monumental. Sensuous. Decorative.	Pompous.	Substantial and Vaulted.
A.D.		**CHRISTIAN.**		
IIIrd to Xth Century—PERIOD OF DECAY & PREPARATION.				
EARLY CHRISTIAN.		Sepulchral. Traditional. Mystical.	Devotional.	Troglodite.
Xth Cnty. to XIIth.	Byzantine or Romanc.	Horizontal Tendency. Semicircular Arch. Materialistic.	Retrospective.	Solid and Domical.
XIIth to XIIIth.	Transitional.	Vertical Tendency. Pointed Arch. Progressive.	Prospective.	Arched.
XIIIth to XVth.	Ogival.	Developing. Typical. Conventional.	Spiritual.	Equilibrated.
XVth Century—Decline of Mediæval and Revival of (quasi) Classical.				
XIXth.		**CHAOS.**		

All reference to Eastern or Indian Architecture is omitted, the object of this Table being to analyse those Styles alone which have had influence upon European Art.

THOS. L. DONALDSON, Profess. Arch. Univ. Coll. Lond.

ARCHITECTURAL PHOTOGRAPHIC ASSOCIATION.

THE collection of photographs at Suffolk-street, from which subscribers may select, contains a number of very fine examples. The arrangements made by the committee, however, have not pleased all the members. In the first place, the photographs are put down at a price, so that a more commercial aspect is given to it than is desirable, and the Association seems to resolve itself into simply a means of enabling the public to obtain photographs at a somewhat lower price than ordinary. Further, to meet the arrangements with the various photographers who have supplied the subjects, subscribers are requested to take only one subject from the same screen, which prevents them selecting what some would desire, namely, a connected series, such as three or four from the Italian specimens on Screen B (by Alinari), a charming collection,—notice particularly 34, the door on right side of the cathedral at Orvieto, and 38, the principal door of the same building,—or a like number from Mr. Fenton's collection (G) of our own cathedrals, such as 140 and 144, from York Minster, and 146, the West Doorway of Lincoln. Doubtless, however, in time the best mode of conducting the society will be hit on. It ought to *produce* works for itself. 8, The Temple of Olympus, and 210, Gate of New Palace at Constantinople (A and K), 74, Santa Cruz door, Toledo (C); 85, Principal Entrance of Rheims Cathedral; and 97, Statues in North Door of the same building (D); 112, Fountain at Nismes; and 120, Place Napoleon (F), are all capital specimens of the art.

LIVERPOOL ARCHITECTURAL AND ARCHÆOLOGICAL SOCIETY.

AT the usual fortnightly meeting of this society, Mr. S. Huggins in the chair, the society's prize for success in the competition in sketching was awarded to Mr. John Pepper, and presented to that gentleman by the chairman.

A letter was received from the Master Builders' Association, stating that it was the intention of that body to invite the members of the architectural profession to a meeting to be held at the Clarendon-rooms, on the 6th of January, for the purpose of considering how the strikes of workmen might be avoided, and requesting that the society would call attention to the fact.

A short conversation took place upon the subject, in the course of which the secretary remarked that the society should not, while giving publicity to the letter, be understood to identify itself either with masters or workmen.

Mr. Picton took occasion to object to the practice of one of the body publishing anonymous comments on their proceedings in the newspapers, as tending to prevent the younger members from expressing opinions.

After some discussion on the subject, the paper for the evening, "A Shower of Parthian Arrows discharged against the Errors of the great Competition," by Mr. W. H. Leeds, was read.

THE CRIMEAN MONUMENT AT SHEFFIELD.

THE monument of which we this week present a view is now fairly in progress of erection, the foundations having been got in, with an ashlar bed to avoid all risk of settlement. On the advice of the well-known geologist, Professor Phillips, the architect, Mr. Goldie, of the firm of Messrs. Weightman, Hadfield, and Goldie, has decided on the adoption of the Darleydale stone as the only material calculated to withstand the destructive influence of the gases pervading the Sheffield atmosphere. The shafts will be of red and green Connemara and Derbyshire marbles, and Aberdeen granite. Messrs. Lane and Lewis, of Birmingham, are the contractors.

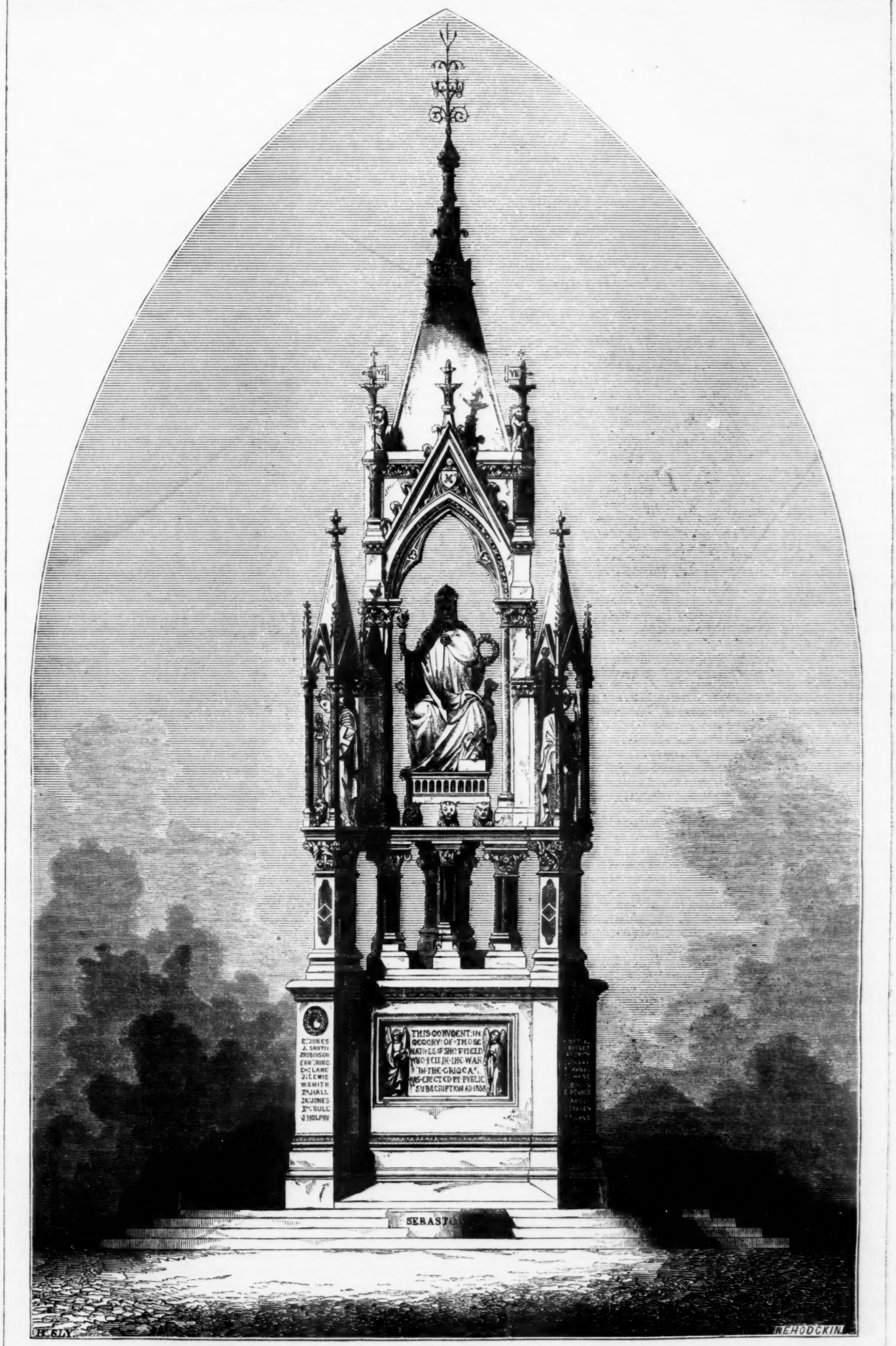
The base of the monument is octagonal. There will be four ascents of steps, with four bastions interposed, each bastion supporting cannon. The pedestal has four faces or panels. One of these will be devoted to the inscription commemorative of the intention of the memorial: the other three will contain bas-reliefs of the battles of the Alma, Balaclava, and Inkermann, to be executed in bronze if the funds will admit of the extra cost. The base of the pedestal will be moulded (with stone seats between the buttresses), and its cornice sculptured with the national emblems.

At the four angles over the buttresses will rise square detached pedestals, inlaid with marble, and having moulded bases and foliage capitals. These will support niches formed by marble shafts, and protecting statues, 7 feet high, representing the allied kingdoms.

The main feature of the design will rise in the centre of the four niches. Upon a cluster of coloured marble columns, with an octagonal granite shaft in the centre, there will be a large canopied niche, richly moulded, arched, crocketed, &c. with angels bearing the shields of the allied kingdoms in the pediments of the canopies, and lions on marble shaftlets supporting gilded vanes at the angles. The canopy will consist of a pyramidal stone roof, bearing as its finial the crown of England. Beneath the groined roof of this canopy, enthroned upon lions, will be a colossal female figure representing England victorious, resting on her half-sheathed sword, and crowning her heroes. It is proposed to adopt the portrait of the Queen as the head of this ideal figure of Britannia. The total height will be about 60 feet.

The site of the monument is an open space, with streets all round, but very ordinary three-storied brick houses about it. There are a few trees in the enclosure, but they are smoke-dried town trees. The monument will face "The Lamp," so as to look towards "South-street."

WALSALL FREE LIBRARY COMPETITION.—The town council have selected the design of Messrs. Nichols and Morgan, of West Bromwich. There were thirty-eight competitors.



THE CRIMEAN MONUMENT AT SHEFFIELD.——MR. G. GOLDIE, ARCHITECT.

OPENING MEETING OF THE ARCHITECTURAL MUSEUM.

MR. RUSKIN'S ADDRESS.

ON Wednesday evening, the 13th, the opening meeting of the session was held in the theatre of the Museum, at Brompton, Professor Cockerell, R.A. presiding. The theatre was crowded in every quarter.

The Professor said he felt greatly gratified in presiding at this the first meeting of the members of the Museum, first established in Cannon-row, in the new and elegant theatre of its present magnificent locality. The museum had thus become associated in its new sphere of usefulness with every department of subsidiary art that could be of service to the interests of architecture—the *ars regina*. It was his duty to announce to them that on this occasion the prizes that had been offered by Mr. Ruskin, to those worthy artificers who gave the best examples of their skill, would be presented; and he was quite sure they would hail with interest the institution of a prize of this sort, introduced by a gentleman so illustrious in the world of letters and of art, noted not only as an eminent theorician, but as a practical artist, in whose works we were deeply interested, but who came forward individually on this occasion as a liberal and practical patron. As an old practitioner and veteran in these arts for upwards of half a century, he had only to express his admiration and astonishment at the stride they had taken during the course of his career. Literally speaking, he, the professor, was born and bred in the last century, and he was, therefore, in a position to speak of the great and glorious progress that the art of architecture and its sister arts had displayed during that important period. At one time he thought it was but a dream of the imagination, but now he found it confirmed as a reality. Now that the Government of this country—tardy at all times on the advance of those things that were not absolutely essential to the well-being of the country—had taken up the patronage and promotion of one of the noblest arts of a country that had been so long famed, in other ways, for its philosophers, its poets, its prowess, and scientific attainments. The noble art that conferred such glory, decoration, and beauty on a country, was now recognized as one of its indispensable institutions, and that art, the art of architecture, which had been the glory of Athens, of Rome, of the Revival and the Middle Ages, was now felt to be a national point of honour to this country. He gloried in this, having devoted for so many years his best energies and efforts to the advancement of their noble and beautiful art. Government for upwards of thirty years had been engaged in the promotion of this consummation for the advancement of art in its schools of manufacture and design, which were more or less connected with their own art, and which had made remarkable advances. His Royal Highness Prince Albert, with his enlightened mind, and most strenuous and sincere ardour for the honour of this country and the glory of those arts which he understood so well, had put himself forward on all occasions for their promotion, and had planted the institution they were assembled to do honour to in the position in which it then stood. He had heard that in this Museum of Arts no fewer than 250,000 persons had been visitors during the past year, and they would readily see from this how the efforts of the Department had been seconded by the ardour of the people. Thanks therefore be to his Royal Highness, and to the Government; and let us hope that, under such auspices, we might, in all that appertained to art, follow the bright examples of Athens, of Rome, of the Revival, of the Middle Ages, and of Leo X., and thereby confer upon our own country the impress of immortality and grandeur which gave such glory to theirs.

MR. RUSKIN then addressed the meeting. It was a matter of the greatest gratification, he said, to him to be associated in any way with the efforts that had inaugurated and brought the Architectural Museum to the position it now occupied in that admirable building; and the more so, as it was under the presidency and auspices of our Professor of Architecture—one of the most graceful and distinguished designers in the school of classical architecture, a style in which grace and beauty of design are most required. He felt this the more deeply because he knew that our Professor of Architecture could not countenance some of those things that he (Mr. Ruskin) had audaciously, and perhaps ignorantly, advanced in the haste of a young man, or in a state of mind in which he struck at things which he definitely felt to be false and evil, and where one did not perceive that which was associated with them of the wise or of the good. He knew that there was much to forgive in him, and he felt the Professor's forgiveness, though he could not adequately express it; and as he could not tell them just then how he felt it, he would go on with the business on hand. That business, he was sorry to say, had for his own part been somewhat of a failure. And yet he was not so sorry for it as he might otherwise be, because he well knew that things that took long for the doing very often did not turn out at first altogether prosperous. There was oftentimes some unforeseen difficulty to disappoint—some dread Nemesis in the state of human things to thwart and interfere; and he had frequently noticed, that when affairs began too swimmingly, and went on well at first, they did not always come to a prosperous issue. These disappointments, however, served only as correctives to make one cautious, and taught us to tide on unweariedly, in the face of difficulty to the winning-post of our effort and ambition. Now he had met, he confessed, with considerable disappointment in the case of the prizes he had offered for sculpture; and he was afraid he had been instrumental in doing injury to persons to whom he wished purely to do good. He hoped this might prove otherwise, but he would explain the circumstances under which they were invited that evening, to witness the giving away, not of a prize, but some compensation to two intelligent men for the loss of time they had sustained, owing to his fault rather than theirs. The circumstances were briefly these. In common with nearly all interested in architecture of the rising school, he felt that a building differed from all other works of art; that it was the work of many instead of one; and in this he conceived consisted the essential difference between architecture and all the other arts. Whatever was done by the other arts was done by a single hand, operating under the influence of a single mind; whereas, in architecture, many hands operated and were pressed into the service of one guiding mind, that regulated them all. Now he did not think this should be so. He thought that in bringing many hands to bear on the subject, you should bring the heart and the brain to bear on it; also, that in every hand you occupied you should interest a heart, that you should elicit the value of the heart, and the whole value of the man, as well as of his work. Recompense him, not only for his time and labour, but for his thought and spirit; and in that way you would get the most fruit out of all the efforts made, and the result would redound to the advantage alike of art itself, and of those that were employed. It appeared to him that for a long time we had wholly neglected these peculiar characteristics of architecture. We had thought it was impossible. It seemed to us that it was one ruling mind only that should be employed, and that all inferior workmen should bring to bear subsidiarily their dexterity and manual skill. Now, whether the man was skilled or not, the best part of him was always his thought; the most interesting part of a man, and that which we always liked to get at, was his thought. It would be better, instead of making those parts of your building wholly uninteresting, and in which you could not bring the first-rate mind of the architect to bear, if you employed in the subsidiary places the operations of the inferior art-workman mind, by means of which you would both educate that mind, and bind the whole of your building into a sublime expression of the mind and soul of the multitude. In order to this end, it was, of course, necessary that the workman should be accustomed to express himself in stone; and then as one of the objects of the Architectural Museum, and it was one of his objects, to ascertain exactly where the English workmen were at this moment, to ascertain precisely what they can do and what they understand, by expressing themselves with the chisel, so as to open up the mind of the art-workman, and develop his executive skill and intellect in dealing with the inferior and subordinate departments of a building. Accordingly, in 1855, he offered a prize for a small capital of original design. There were five competitors. One of the capitals was very beautiful; workmen were accustomed to carve capitals more than anything else, and he had great delight in giving that prize. Last year he offered a prize for a carved panel, and in order to make the test more complete, he asked that it should give a representation of some historical event that had taken place during the year; and he thought that, interested and cognizant as our workmen were in all the leading national events, it would surely be the means of bringing their intellects out, and that they would seize the opportunity, proudly, for displaying their artistic talent. But he was disappointed, only two responded to the offer; and he regretted to say that neither of these competitors, though zealous and intelligent workmen, produced a piece of sculpture to which he could feel himself justified in awarding a definite prize. He believed, however, that their failure was owing, in a great measure, to his not having explained to them the principles on which architectural sculpture was based; and as he had omitted to do this on a former occasion, he would now make up for that omission by explaining precisely what he meant. Mr. Ruskin then read an elaborately prepared and eloquent paper, in which he first descanted at great length on art as it existed in its attributes of capacity and power, in the two widely-different art-parallels of the Highlands of Scotland and India, and tracing in a somewhat novel manner the differences that exist between the art and mental disposition of the two nations. He had, while passing through the north of Scotland on a recent occasion, been impressed with a peculiar painfulness at the total want of all manifestation of high art in the midst of romantic and magnificent natural scenery. He had looked with delight on the carved cottages of Switzerland; on the noble cathedrals of Germany; on the fantastic houses and pretty pictures of Flanders,—and in them he traced the handiwork of art. Not so, however, in the north of Scotland, with nothing but its rude Highland cottages,—heaps of grey stone covered with thatches of black wheat, or of withered heather; the only approach to rude beauty, or to art, being the diagonal arrangement of the lines on the roof; and even these looked as though the surface had been scored over by some gigantic claymore.—While meditating and lamenting over this absence of art among the Highlands, and wandering by the shores of one of the loveliest estuaries in the world, placed between the crests of the Grampians like a rich jewel clasping the mountains to the blue zone of the sea, he was led, in a mood of truant contemplation, arising out of the events that were going on in India, to compare this condition of art in Scotland with that of art in the less civilized region of India, where a love of art seemed to be inherent in the race, whether in colour, wool, marble, or metal, or in decorative works, which were inimitably beautiful, enriching with a profusion of enchanted iridescence the dome of the pagoda, the edge of the girdle, or the sheath of the sword. Here was a curious and remarkable contrast. In the one case you had all the national capabilities opposed, as it were, to the development of art, and in the other devoted to its most magnificent expression. When, however, they came to consider the moral and social character of the two countries, they would find that the difference was as vast as was that displayed in their capacity for art. India, with all its barbaric art, was barbaric in moral and social science, while Scotland was rich in all the dearest duties of life, and in all the heart's richest charities. Out of the peat cottage of the Highlander came forth love, self-sacrifice, piety, bravery, devotion, death;—attest it, ye noble sons of Scotland, on Crimean and Indian soil! Out of the ivory palace came treachery, cruelty, cowardice, and all the elements of hell;—attest it, fiendish sepoy and Cawnpore! And this led him to observe upon the apparent fatalism that seemed to exist in connection with all great successes in art, with subsequent national degradation. We found in the annals of the past that those nations who were foremost in refined art were always subdued by those who had none. The Lydians were conquered by the Medes, the Medes by the Spartans, and the Romans by the Goths; and from the moment of the meridian of art its sun declined and set. There ensued a species of art-paralysis. Art had appeared principally in connection with superstition in Egypt, Babylon, Greece, and Italy, and was developed under strong excitement and gross superstition in the worship of Osiris, Minerva, and the Queen of Heaven. It would be difficult to show that art ever existed in our energetic school, unless engrafted on either superstition, sensuality, luxury, or cruelty; and if this, paradoxical as it might appear, could be mathematically demonstrated, was it not doubtful whether in this nineteenth century they were assembled in that Museum for any good purpose, and whether they might not be looked upon as so many Catalines assembled to promote the degradation of our country. Mr. Ruskin then proceeded to pass a high eulogium on the Scotch character, from his own view-point. All the loftiest parts of the Scotch character were derived from the pure elements of their own country, from the association

of natural scenery with the passions of the people, and this was beautifully portrayed in the pages of Scott and Burns. He then proceeded, in general terms, to discourse on the principles that should guide art-workmen in the study and execution of sculpturesque art, and on the effect of art on the mind of nations and of men. Everything in the way of a healthy and pure state of art depended on the exercise of the important function of the interpretation of facts. True art, while it really imitated, described and explained nature. Our art-workmen were not sufficiently accustomed to increase this principle, or to display this power. The first element was a love for nature, leading to the effort to observe and report her truly. The lecturer then proceeded to reply to the difficulty he had, but the answer was of too subtle a character to be seized in our notes. No great skill in art was ever yet attained, in which we had not the representation of some series of natural facts, whether in the Athenian, the Florentine, or the Venetian school. The Athenian or Greek school, in the pursuit of truth of form, proposed the perfect representation of the human body, and did it well, as was witnessed on the Theseus of the Elgin marbles. The Florentine school pursued truth of expression, as in Raffaelle and Michelangelo. The Venetian school pursued truth of colour, and light and shade, as in Veronese's Marriage in Cana, in the Louvre, which gave the most perfect representation of colour and chiaroscuro. As regarded the school of Gothic art, it had been too much the fashion to consider it as one of form rather than of fact—as a school of pinnacle and buttress, of disguise and of grotesque; but this was an unquestionable mistake. If they went back to the beginning of Gothic art, they would find that it was based upon the same stern faithfulness that characterized the resources of the Classic, or of any other school. Recently, in one of the professional papers, he had lighted on a quotation, by one of the lecturers of Aristotle's definition of the principles of beauty, and the doctrine derived from it was the doctrine of an architect who did not acknowledge the want of sculpture in architecture, and did not employ it in buildings, because he had no power over it, but who endeavoured to substitute for it mathematical proportions. The lecturer then caused to be uncovered, to the great amusement of the audience, two drawings or illustrations of early grotesque barbarisms in sculpture—one intended for the representation of an angel, and the other the serpent beguiling Eve; the one an "invention," so to speak, the other a rude attempt to lay hold of the heart of the event and represent facts—the one the work of a mind that never would progress, the second of one that would improve with every attempt. These were early barbarisms, and served as milestones to measure the advance of art; but if we wished to see Gothic art in all its grandeur, we must look at the Norman architecture, not of Northumberland, but of Normandy, and in the once absolutely beautiful north transept of the cathedral at Rouen, though, he regretted to say, that existed no longer—it had been restored! Chartres also furnished beautiful illustrations. Gothic was an art for England and the world. It was not an architecture of tradition, but of fact and stern reality—it was not an architecture for churches, but for cottages and houses: whosoever built in it, or worked in it, as an ancient thing or a formal thing, for its ecclesiastical tradition or its geometrical science, knew nothing of its essence or its power. Cast away the mysticism, the symbolism, the one-sided geometricism and legalism that surrounded it. Seize hold of God's hand and you were sure of support and victory. We all viewed with love the Gothic, all that ever was done in it, all that ever would be done. Adverting to the more immediate matter before them, he certainly did expect some better response to the prize that he had offered, in these days, when every publication teemed with illustrative designs, from which our art-workmen might derive ideal design. The workman in the present instance, had expended all his time and attention on the stone-cutting, instead of on the historical topic. The panels were too much undercut, and in the action of the figures there was a want, though in other respects there was skill. He should, however, feel great pleasure in the presentation of the prizes by the Professor.

Professor Cockerell then in a few phrases presented the prizes to Mr. Chapman and Mr. O'Shea, the workmen who had submitted carvings.

Mr. Ruskin again rose, and made some supplementary remarks. He hoped to have another opportunity of entering on the question of design. It was to be looked upon as a cardinal principle, that whatever was great in human art was the expression of man's delight in the works of God.

Professor Cockerell, in moving a vote of thanks to Mr. Ruskin, said he had felt almost inclined to call Mr. Ruskin to order when he characterised them as an assembly of Catalines, had not the observation, as was quite clear from what subsequently fell from him, been made in admirable irony. Mr. Ruskin had referred to the decline and final extinction of art in the case of other nations; but he thought if there was one thing in the world that conspired to prevent such a catastrophe in connection with art, in this country, it was *liberty*,—liberty, which would ever be a watchword and an advance-guard in the high march of art; and he could not better illustrate his feeling on the subject of the arts than by quoting these noble lines of Thompson:—

> "However puff'd with power, and gorg'd with wealth,
> A nation be; let trade enormous rise,
> Let East and South their mingled treasure pour,
> Till, swell'd impetuous, the corrupting flood
> Burst o'er the city and devour the land:
> Yet these neglected, these recording arts,
> Wealth rots, a nuisance; and, oblivious sunk,
> That nation must another Carthage lie.
> If not by them, on monumental brass,
> On sculptur'd marble, on the deathless page,
> Impress'd, renown had left no trace behind:
> In vain, to future times, the sage had thought,
> The legislator plann'd, the hero found
> A beauteous death, the patriot toil'd in vain.
> Th' awarders they of Fame's immortal wreath,
> They rouse ambition, they the mind exalt,
> Give great ideas, lovely forms infuse,
> Delight the general eye, and, dress'd by them,
> The moral Venus glows with double charms."

The Hon. Mr. Cowper, M.P. President of the Council of Education, briefly proposed a vote of thanks to the chairman, and the meeting separated.

CHURCH-BUILDING NEWS.

Colchester.—A project is on foot for restoring and ornamenting the tower of the church of St. Mary-at-the-Walls, Colchester, by heightening it several feet, and surmounting it with pinnacles, and providing a clock to chime the hours. At a private preliminary meeting of a few friends at the rectory recently plans and drawings were submitted by Mr. C. Hayward, architect, and resolutions were adopted for carrying out the restoration, if the required sum of 750*l.* could be raised. The sum of 113*l.* was subscribed by a few gentlemen, and a provisional committee appointed for carrying out the resolutions.

Tunbridge Wells.—St. John's church, on the Lew, was consecrated on Tuesday in last week. The site is a piece of ground presented by the Conservative Land Society, and sufficient in extent for the erection of a parsonage in connection with the church. The foundation stone of the church was laid on the 1st of June last. The architect was Mr. A. Gough, of London. The church is built of brick and stone, and about one-third of the latter material, which has been used in the internal construction of the walls, was presented by Mr. C. J. Fisher, and was hewn from a quarry belonging to him in the neighbourhood. The facing is of Kentish rag stone, with Bath stone dressings. The building is cruciform, consisting of nave, north and south transepts, and chancel; but the form is somewhat obscured by other arrangements, the angle formed by the intersection being occupied on the south side by the tower and vestry, and on the north side by smaller gabled bays with arched openings into the nave and transept of the church. The entrances are at the west end, and in the tower on the south side. The ornamental ironwork is throughout in the Decorated style of the fourteenth century. The entire length of the church is 82 feet, the width of nave 23 feet 6 inches, and across the transepts 48 feet. Externally, the chief features which present themselves are the windows, especially the one over the western entrance. It is of circular form, carved, with tracery of plain, buoyant character. The whole of the windows are glazed with Hartley's semi-opaque glass, of small trellis pattern, so as to avoid the necessity for using blinds. In the nave, on both sides, are six windows, of three compartments each, the heads of which are filled in with flowing tracery. The north and south transepts are lighted by single five-light windows, with carved tracery corresponding with the other windows. The entrance to the tower consists of plain splayed jambs and arched head, surmounted by a crocketed gablet and finial. The upper part of the buttresses terminates with gablet water tables. The height of the spire above the tower is 86 feet to the top of the vane. In the interior of the church the roof is open. The timbers are stained in oak colour. The gangways are paved with red and grey Staffordshire tiles, and the chancel is inlaid with ornamental encaustic tiles in lozenge compartments. The church will afford accommodation to about 470 persons; but the accommodation can be extended by the erection of galleries at the west end of the transepts. The church is lighted with gas, and warmed by means of five gas stoves. The seats are open benches, with plainly-moulded cut elbows, and stained throughout.

Cattistock (*Dorset*).—The parish church of St. Peter and St. Paul, Cattistock, near Maiden Newton, Dorset, has been restored by Mr. Scott, and re-opened. The restored chancel and nave and new aisle are in the Early Decorated style. The chancel windows, of stained glass, are by Mr. Lavers, designed by Mr. A. Bell. The wrought-iron gates for chancel screen are by Mr. Skidmore, of Coventry, and the rest of the iron ornamental hinges, &c. have been executed by Mr. L. Curtis, blacksmith, of Maiden Newton. The Hamhill stone was supplied from the quarry of Mr. J. Trask, of Hamhill. The builder was Mr. John Wellspring. The ornamental carving was contracted for by Mr. William Farmer, of London, and was executed under his directions by Mr. William Brindley, who also, under the same master, executed that of Woolland Church. Mr. Irony was clerk of the works. This church, no doubt, says the *Dorset Chronicle*, was one of the wooden erections incident to the times preceding the Conquest: fragments of charred wood were found in the lowest foundations. One of the discoveries, continues our authority, was the most remarkable we have ever heard of in connection with a church site: it consisted of portions of the plaster coloured in fresco, and pieces of flue and wall tiles, evidently belonging to a Roman villa. The explanation must be, that the remains of a Roman villa exist somewhere in the immediate neighbourhood of the church site—so close, indeed, that the fragments of plaster, tiles, &c. must have been appropriated, on the rebuilding of the church, from being thus at hand. Of the Norman church rebuilt on the ruins of the Saxon, evidence was found showing that the chancel arch was existing down to 1600—having evidently been altered about the period when the chancel was rebuilt by the Strodes. A number of the carved heads from the Norman corbel table, round the exterior of the church, were found, and have been preserved, by being rebuilt into the interior of the staircase of the tower. The east window of the Early English chancel, consisting of two lights, with a circle over, having been discovered taken to pieces, and used up for walling stone, has been rebuilt into the west wall of the new aisle—this chancel having been lighted by two single-light windows on each side, and having a door on the north. An old lethnoscope, or squint, existed in the south wall: it has been preserved. Mr. Scott's restoration consists of the nave, new south aisle, and chancel, leaving the two transepts and the tower, which is Tudor and battlemented. He has added a sort of covered entrance, or cloister, forming a west porch for the entrance of the clergyman. The nave is reseated with open benches. The roof is open timbered and of high pitch. The piers are monoliths of Hamhill stone, having Bath stone moulded caps and bases. The west window is filled with geometrical tracery. The chancel is lofty, and consists of three Gothic orders, the inner of which is red stone, the next white, and the next white and red in alternate blocks, and having outside a label of red stone. The chancel windows have all columns of serpentine.

Stradishall.—The ancient church of this parish has been again opened for divine service, although the repairs and restoration in progress are not yet completed. The interior of the nave has been cleared of its unsightly pews, and has been fitted with open seats, with oak ends and poppy heads. Six new clerestory windows have been inserted, with Bath stone dressings, in addition to two decorated windows on the south side, presented by the churchwardens.

Bromsgrove.—The contractor, Mr. Cooper, has commenced the internal restorations of the parish church.——The grounds are now laid out for the new cemetery of this town. The land appropriated for the site is in extent six and a half acres, contiguous to the churchyard. A broad path from the parish church to the principal entrance to the cemetery will be constructed, so that a corpse, after the service, can be carried direct from the church to the grave. A red brick and stone building has been erected near the principal gates for the residence of the clerk and sexton. It is in the Elizabethan style, has a tower, and possesses accommodation for the meetings of the Burial Board and the transaction of business con-

nected with the cemetery. The builder was Mr. Walker, of Evesham. The burial ground is disposed in geometrical sections, intersected at convenient distances by broad gravel paths in accordance with a design furnished by Mr. Cooke, the architect. The portion of the ground reserved for Dissenters will be approached through a lich-gate, facing Church-street.

Worcester. — The Angel-street Independent Chapel is to be rebuilt. Five gentlemen of this city have subscribed 3,000*l.* and the whole subscription is already upwards of 4,000*l.* The expense of rebuilding, according to the *Chronicle*, is roughly estimated at 5,000*l.* 500*l.* of which, it is calculated, will be covered by the sale of the old materials. The new chapel, it is proposed, shall have a frontage to the street, instead of being thrown back as at present, and by pulling down a house, adjacent to the entrance to the existing structure, a tolerable width will be gained for this purpose.

Burlescombe (*Devon*).—A window has been executed for Burlescombe church, by Mr. Toms, of Wellington. It is of the later Tudor style of architecture, and is of four lights, with six tracery lights, besides small quatrefoils and trefoils. The ground of the glass is ruby: in the lower lights this is covered by a pattern, formed of the interlacing boughs of a vine and clematis, or traveller's joy, which spring from the extreme sides of the window: this pattern varies in each light. The branches are formed of white glass, but the leaves, bunches of grapes, and flowers, are in their natural colours. Under the branches, as under a bower, is represented the adoration of the Magi, adapted from an oil painting, by Bonifacio, the Venetian. The figures are placed on turf, with a purple curtain hanging behind them. In openings in the foliage above, which form panels, appear figures symbolical of the after history of the Gentile Church. These are in white, with starry crowns, winged, showing the various stages of the combat the church sustains with the evil one. These panels are of blue ground: the ruby ground extends to the tracery lights, which are filled with figures of angels. The window is almost entirely in glass, manfactured by Messrs. Powell. The design is said to be due to a gentleman in the neighbourhood.

Swindon.—A stained glass memorial has been put up in Broad Town Church. It fills the central light of the east window, which is a triplet, and has been erected to the memory of Mr. Thomas Gale, by his daughter, Mrs. Stiles, of Ham. The window was designed and executed by Messrs. Baillie and Co. of London, by commission of Mr. W. Hopkins, of Swindon.

SCHOOL-BUILDING NEWS.

Bristol.—The opening of the St. Nicholas and St. Leonard Schools, in Back-street, Bristol, took place on Thursday in last week. The buildings consist of an infants' school-room, separated by folding doors from the girls' school-room. There are separate entrances for the girls and infants and the boys, a house for the master and mistress, and a play-ground. The cost of the site had been 650*l.*; the buildings, 1,300*l.*; and the fittings, &c. 150*l.* making a total of 2,100*l.* Government gave 1,150*l.* and the subscriptions amounted to 800*l.* leaving still due between 200*l.* and 300*l.*

Swindon.—A movement has been made here by the Rev. A. Morrison, for the erection of new schools, to be commenced early in the spring. A site has been presented by the trustees of the Broad Town Charity.

Oldbury.—The new school in connection with Christ Church, Oldbury, and which is situated near the Parsonage, was opened on Tuesday in last week. The building is in the Gothic style. The material is red brick, with stone dressings, the fittings inside being of stained deal. The school-room measures 45 feet by 12 feet, and has a class-room belonging to it. Adjoining the building is a residence for the infants' schoolmistress. The architect of the school was Mr. William Bourne, of Dudley; and the builders were Messrs. Chambers and Marsh, of Oldbury. The total cost was 893*l.* The grant from Government and other sources amounted to 344*l.* A balance of about 50*l.* still remains to be subscribed.

Altrincham.—New schools have been erected at Bowdon, in connection with St. Margaret's Church. The schools, which are situated between Ashley-road and the Downs, were designed by Mr. Roscoe, architect and surveyor to the Earl of Stamford, and built of stone by Messrs. Bowden and Edwards, of Manchester, in a style of architecture to correspond with the church—the Decorated Gothic. The boys' and girls' rooms will accommodate 200 scholars each. The total cost of the erection has been 1,640*l.* The Earl of Stamford gave the land, valued at 352*l.* the committee of council on education a grant of 756*l.* and the remainder was raised by subscription from the parishioners.

Selby.—New national schools have been opened here, on a site in New-lane. They are three in number, namely, the boys' school, which is said to be 64 feet 9 inches in length by 18 feet in breadth, and in connection with it is a class-room, 18 feet by 13 feet: the girls' school 65 feet by 18 feet, with a class-room similar to that attached to the boys' school; and the infant school-room 54 feet long by 18 feet in breadth. Immediately adjacent to the schools are two houses, one of which is to be the residence of the master and the other that of the mistresses. The buildings are of the Gothic style of architecture, and the plans were prepared by Mr. R. Gould, of York, architect, under whose superintendence the work has been executed. The schools are built of red brick, with stone dressings, and some of the windows are traceried. The roof is timbered, and the rafters stained and varnished in imitation of old oak. The desks and seats are fixed upon cast-iron standards. Outside the schools there is space allowed for playgrounds, and the ground fronting New-lane is enclosed by a palisading, with moulded piers and stone copings. The contractors for the execution of the work were—bricklayers and stonemasons, Messrs. Young and Biscomb, York; joiner, Mr. W. Cook, York; plasterer, Mr. H. Young, York; slater, Mr. Ellis, York; plumber and glazier, Mr. J. Underwood, Selby; painter and stainer, Mr. Bulmer, York. The site of the buildings, valued at about 300 guineas, was given by Lord Londesborough, the lord of the manor, and his lordship also subscribed 100*l.* towards the erection of the schools, which cost about 2,400*l.* subscriptions to which were given by the Rev. F. W. Harper, the perpetual curate of Selby, and the principal families of the town and neighbourhood. A grant of 1,000*l.* was received from the Committee of Council on Education, and the funds were also aided by grants from the National Society, the York Diocesan Board of Education, and a sum of 100*l.* from the feoffees of pious uses in the parish of Selby. The whole sum necessary for defraying the cost of the schools has been obtained.

PROVINCIAL NEWS.

Alcester.—The corn-exchange here has been opened. The building is 66 feet long, 30 feet wide, and 33 feet high. There is a gallery, with an open front of ornamental ironwork at the west end. The central and principal entrance is from High-street. The whole space above is occupied by a committee-room; this room and the gallery being approached by a flight of stairs from the main passage. The building fronting High-street is described as being somewhat in the Italian style, of brick with Bath-stone dressings. It is divided into four recesses by stone pilasters, extending the whole height of the building to the main cornice: these pilasters are finished with moulded caps, which support the entablature; a moulded cornice, supported by trusses, surmounting the front. The windows, eight in number, are finished with stone dressings, moulded strings separating the upper from the lower only. The architect was Mr. Edward Holmes, of Birmingham; and the contractor, Mr. Joseph Hardwick, also of Birmingham.

Cheltenham.—A project set on foot by Mr. J. P. Knight, architect, and backed by the approval of a number of owners and occupiers of property in the borough of Cheltenham, has been laid before the Town Commissioners, for the formation of a new street, commencing at the western end of Clarence-street, and terminating on the eastern side of St. James's-square. It is intended as a means of better communication with the Great Western Railway, by affording a shorter and more agreeable route than exists at present.

Stratford-upon-Avon.—There has been recently built, at the cost of Miss Mercy Newland, at the Guild Pits, in this town, four almshouses, which are already occupied by five widows and a man, to each of whom she allows 4s. per week. The previously existing almshouses were built by the Bishop of Chichester, in 1296. They are twenty-four in number.

Droitwich.—A new national school for boys has this week been occupied. The school was built by subscription, assisted by a Government grant, and is the result chiefly of the exertions of the Rev. W. Lea, vicar of St. Peter's, Droitwich. The building consists of a school-room, 51 feet 3 inches, by 20 feet; a class-room, 24 feet by 14 feet; a hat-room, lavatory, &c. The roofs are high-pitched, covered with slates having ornamental ridge, and the timbers are open to view in the interior. Externally the building is of red bricks, relieved by white and blue in patterns. The jambs of windows, &c. are in alternate courses of red and white; and the plinths, label mouldings, string-courses, copings, &c. are in blue materials. The chimneys are prominent features, and are formed, in plan, by intersecting squares. The school was built by Mr. Jno. Shilworth, from the designs of Mr. J. Smith, of this town. In several farm-houses in this neighbourhood, recently erected or repaired by the same architect, ornamental brick-work has been employed to a considerable extent, more especially in the chimneys. In the new bath-rooms, also recently built, on the property of Lord Ward, in this town, Mr. Smith has made the chimneys more than usually conspicuous. The design of this building partakes of the Italian character, and the bracketed cornices to roofs and chimneys are the most marked features.

Liverpool.—Tenders for the building and completion of the Free Library and Museum have been opened. A considerable number of tenders were given in, and the successful competitors were found to be Messrs. Holme and Nichol, of Liverpool, whose tender was the lowest (30,700*l.*). Mr. Browne has imposed on himself all the pecuniary obligations. The various tenders, according to the *Journal*, were very nearly on a par.

South Shields.—Mr. John Ayris has resigned the borough surveyorship of South Shields, to accept the appointment of manager of the Norwich Waterworks.

SCHOOLS AND REFORMATORIES.

THE necessity for a movement of sufficient importance to meet the monstrous social evils which exist amongst a considerable portion of our population is now generally acknowledged. But as to the means of remedy, doctors differ; and of such great importance is this subject, that it is worth while to consider some of the opinions which are given, and also to glance at a few of the attempted means of improvement which are in progress.

As regards jails, houses of correction, and convict establishments, which have grown up to an enormous size, and are still unfortunately increasing more than in just proportion to the advance of the population, it has, we think, been clearly shown, that while they fulfil the necessary purpose of confining criminals, they are but of little account in promoting reformation, and that but a tithe of those who have been once condemned to imprisonment within the walls of these expensive national institutions become, when set at liberty, useful members of society.

Then as to the parish workhouses and unions scattered over the metropolis and the country, in which many thousands of children are annually reared, and where an immense number of all ages find shelter, observation and inquiry force us to state that the method of rearing and training pursued in these establishments has generally failed to produce a useful body of able and willing working men.

Besides the above, there are numerous schools of a charitable description, of various grades, into the poorest of which it is considered a privilege to obtain admission, and to be dismissed from which would be considered a matter of disgrace; and in these places many a bright man has been provided with the means of commencing, with some chance of success, the battle of life.

The penitentiaries for females must not be overlooked; and it should be remarked that the chief of those which have effected the greatest amount of good are the institutions which are open for the reception of such as voluntarily offer themselves, and from which they are at liberty to depart when they think proper.

The attendance at the ragged schools, and the reformatories connected with them, is voluntary; and to this circumstance we are inclined to attribute the chief part of their usefulness.

The reformatory in Great Smith-street, Westminster, which is one of the oldest and most extensive in London, is a remarkable instance of the success which has attended this voluntary treatment of some of the worst criminals. It is interesting and instructive to trace the origin and progress of this reformatory, which has been the means of placing a large number of the worst characters in a position of society useful to themselves and others.

It is now some time since we had an opportunity

of listening to the account of Mr. Nash, the founder (who is unfortunately dead), of the formation and progress of this reformatory. Mr. Nash was a man of gentlemanly address, and remarkable for his kind yet firm manner. He was in early life an assistant to a linen-draper in the Borough, and devoted his spare time to teaching in the Sunday-schools, and in visiting the dwellings of the ignorant and poor, and while thus engaged was overwhelmed with the extent of the distress and vice which came under his notice. Two boys, totally desolate, and in the most miserable condition—worse, in fact, than any he had before seen—and who had been imprisoned for stealing food, and begging, induced him to rent a small room in a miserable neighbourhood, as a shelter, until he could determine what should be done with them. The beneficial change which he observed in their manner, after a short period of kind treatment, induced him to take a larger number of youths who were totally cast without the pale of society, and without a chance of acquiring anything but evil. Mr. Nash's means were very limited, and he had besides a family of his own: notwithstanding, he supported these lads; and it seemed stranger than the pages of romance to hear his description of this early idea of a reformatory. The house in which he had taken a room was a large one, let out in tenements, every one of which was occupied by thieves and prostitutes; and from morning till night, and sometimes all night through, the most vile language was in use, and scenes of strife were constantly occurring.

The food supplied by Mr. Nash to his lost flock was of the plainest description, and yet, so far as he was able to judge, no contact took place with those who had come under his charge and the bad characters who were in the other rooms. Other youths attracted Mr. Nash's notice, and he determined to sleep on the premises and devote a large part of his time amongst them. The room was whitewashed by the boys; the floor constantly cleaned; economical yet homely methods adopted to prepare coffee, &c. "The clothing," said Mr. Nash, "was the most difficult part of all; they were perfect scarecrows; and when we went out together for a walk, or to take a bath in the Serpentine, it was a sight which every one turned round to look at. I could not have begged for myself: but somehow I became bold in the cause of these lads, who seemed to be placed in my charge by a wise Providence to save them from destruction. I asked every one I could think of, and, by one means or another, got them cleanly and comfortably clad. It is true that the fitting of the garments was extraordinary; and perhaps we attracted even more attention when in this improved guise we appeared in the public streets than formerly. The numbers constantly increased, and I was obliged, most unwillingly, to turn away many. My children, as I called them, continued good; and, being helped by some pecuniary contributions, I was induced to engage more rooms, and eventually undertake the rent of the whole house, which is situated in one of the streets adjoining the present reformatory." So uncertain for a length of time were the supplies of money, that the little fraternity would have been often reduced to complete want, but for the kindness and faith of a neighbouring baker, who at times allowed his bill to run up to upwards of 30*l*. In order to remedy this scarcity, and also to place the institution in a more permanent and extensive condition, Mr. Nash determined, very much against his inclination, to print an account of his foundation, and sally forth without any particular recommendation, the matter then being little known or understood, and feeling sure that his motives would be in most instances mistaken and suspected.

Mr. Nash said, that on his first expedition he felt, in the Strand—where he had determined to make his first attempt—something like a man who had come out to pick pockets or commit some shabby action, and that he wandered along the length of the street several times, glancing earnestly at the countenances of the shopkeepers before he could venture to go in and state his business. In some instances he had dog-like treatment, but in most cases civility, and in some, help; and he soon became so much emboldened, that he succeeded in raising a considerable sum: and, eventually, with the assistance of the Earl of Shaftesbury, and others, a public meeting was held. In course of time, the present premises were taken, which, from time to time have been extended and improved, and where a large number have been saved from the prisons, enabled to learn a means of earning a livelihood; and after a time of probation, assisted to the colonies or to other places for honest employment. There can be no doubt of the satisfactory working of the plan adopted here, and that it has been the means of reforming a very large number, in comparison with those who have passed through the prisons.

Most of the inmates have been punished in various ways for crime three, four, five, and some even upwards of eight times. When driven by distress, or, perhaps, some better feeling, they have here sought admission. We have before alluded to the circumstance, but will again mention, that on any one applying for a home here he is offered a solitary closet, in which are a few good books. Here his diet is limited to bread and water, and he is required to remain without visitors, with the exception of the manager and clergyman, a week. The difference between this solitude and the jail is, that the door is unlocked, and that at any hour he feels at liberty to depart. Several fail in this ordeal, and pass into their former condition; but those who conform to these regulations, are introduced amongst the inmates, where they choose some trade, such as printing, shoemaking, tailoring, &c.: this occupies a considerable part of the day. The plain yet wholesome meals are regularly served, the premises are systematically cleaned, prayers and homely discourses are delivered by the superintendent. Nor is music or useful education omitted. They are also allowed without surveillance to walk for a time each day in the streets and parks, and in few instances is this liberty abused.

We have from time to time seen letters, and heard accounts from young men who, when admitted here were in the most hopeless and degraded condition, and are now in thriving and comfortable circumstances, and who, but for such help as is here offered, would have been preying upon the public, or supported at great cost by the nation.

Mr. Nash firmly believed, and often stated in strong terms his belief, that it was the voluntary nature of this and other similar reformatories which caused the good to arise. When here, the inmates do not feel oppressed with the restraint. They are treated with trust and kindness, and are induced by the better feelings of humanity to make honourable return for the benefits they have received, and they have also hope from the example of those who have started from the place to a new life. He believed that the introduction of inmates into those places by the committal of magistrates or by other forcible measures, would be attended with bad consequences, and render them as ineffective, as a means of reformation, as the prisons. It is to be hoped that these means of saving a large portion of our criminal population will be still further tried.

Some objection has been made to the comforts and cost of these establishments, thinking that they hold out a sort of encouragement to crime. It should, however, be considered, that many are driven to bad acts by circumstances in which they have been born, and which we have often endeavoured to describe.

Many criminals, such as servants, clerks, and those who have not learned any manual trades, are often, for a small fault in the first instance, driven to wrong; and even in connection with the worst criminals, it is evidently a matter of wise policy to save them, if possible, by even a little exercise of kindness and expenditure, than to have the perpetually-recurring cost of imprisonment and prosecution.

Provision should be made for the reception of very youthful offenders in institutions which should not be considered places of disgrace. Those left by bad parents in the street must be also cared for, but we hope that the voluntary reformatories, which have already done good service, may be allowed without change to carry out their useful mission.

STAINED GLASS IN WESTMINSTER ABBEY.

THE five windows which have been recently fixed in the south side of the clear story of Westminster Abbey, executed by Messrs. J. R. Clayton and Alfred Bell, are the first instalment towards the realization of Mr. Scott's scheme for illustrating, in the entire series of clear story windows around the building, the "Te Deum laudamus." The five windows to which we now allude contain representations of the "Prophets" David, Solomon, Isaiah, Jeremiah, Ezekiel, Daniel, Hosea, Joel, Amos, and Obadiah. The figures are each nearly 10 feet in height, and are pointed to by the artists as the most colossal work in stained glass that has been done in England in modern times. This colossal size, however, is, as it seems to us, a mistake, and serves very materially to lessen the apparent height of the building. The drawing is good, and the colours for the most part sparkling. Green, however, is too predominant, and we would suggest that the arrangement by which some parts of the figure are made to break into the border, so as to give it the effect of standing out, is open to criticism.

MILE END OLD TOWN WORKHOUSE,

COMPETITION OF TERMS!

IT is stated that, when the guardians of Mile End Old Town wanted a workhouse, some short time since, they applied to a number of gentlemen to tender for the appointment of architect, and six did so. The "East London Observer" says,—"The merit of any particular man as a ground of selection was tacitly given up, and the question of cost left as the only one to be decided. The tenders came in. The terms varied, but *one-and-a-half per cent.* on the whole cost of the building was the lowest. The guardians selected one at two-and-a-half per cent., and nominated Mr. Dobson as the surveyor, the difference on an outlay of 40,000*l.* being 400*l.*" And then the local journal in question goes on to scold the guardians for wasting the ratepayers' money by paying 2½ per cent. to their architect when they might get one who would "do the job for 1½."

Architects may see what they are bringing themselves to.

THE LATE MR. GRIMSDELL, BUILDER.

WE have this week to record the death of Mr. Samuel Grimsdell, of Sun-street, Bishopsgate, and Bell-lane, Spitalfields, one of the oldest contracting builders in the metropolis. He commenced business contemporarily with the Messrs. Cubitt, and during his long and useful career of upwards of forty years, gained, by his gentlemanly manners and right feeling, the respect and esteem of all who came in contact with him. Previous to his retirement from business, about two years since, he became a director of the City Bank, then about commencing, and has since devoted his energies to the establishment of that undertaking. Like very many who retire from business late in life, he has lived but a short time to enjoy the fortune accumulated by his industry. He expired at his residence, Clapham-common, on the 9th inst. in the seventy-first year of his age. He was a supporter of all the principal charities connected with the building trades.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

ON Monday, January 11th, the ordinary meeting was held at the rooms in Grosvenor-street Mr. J. J. Scoles, V.P. in the chair. Various donations were announced, including from Mr. W. Tite (fellow), M.P. "A Letter to the Committee for Raising the Naval Pillar, or Monument, under the patronage of H.R.H. the Duke of Clarence," by John Flaxman, sculptor (4to.: London, 1799); and from Mr. Wadmore, a bust of Canova.

Mr. C. C. Nelson, hon. sec. in drawing attention to the bust of Canova—a noble life-size of the original,—said the Institute would be glad to recognise the reception of the bust of so distinguished a sculptor, who had done so much in stone and marble towards embellishing and beautifying the sister art of architecture, and confirming thereby the opinion lately expressed by Mr. Digby Wyatt, as to the necessity of the arts of architecture, sculpture, and painting, going hand-in-hand in building. A tour through London would lead the most casual observer to note the general tendency that now prevailed towards the introduction of sculptured ornament into buildings generally; and it was not improbable that the higher branch of sculpture would in like manner be hereafter introduced.

Mr. Digby Wyatt, in alluding to a donation from Mr. Wyld, a catalogue of the works belonging to the Royal Irish Academy, characterised as a valuable presentation, said he had at Mr. Wyld's request sent him everything that could be had in London relative to British antiquities, but he regretted to say that almost the only thing he could furnish under that head was the miserable synopsis of such works in the British Museum.

Professor Donaldson would take that opportunity of stating that the Architectural Exhibition of Scotland were desirous of making the exhibition for the present year more attractive and distinguished than the last, and he had received from his friend, Mr. Hamilton, a letter, in which he urged the desirableness, and stated how grateful that society would be to receive contributions from their professional brethren in London. Any

contributions would be received in London, and forwarded to Scotland, and returned free of expense. Professor Donaldson, in calling attention to a work of St. Charles Borromeo, presented by Mr. Wigley, associate, said the profession was much indebted to Mr. Wigley for translating and reviving so valuable a work. It formed an essential addition to the library of the architect, and introduced them intimately to all the peculiar canons of Roman Catholic ecclesiastical architecture.

The Chairman also commended the work, and more particularly for that frequent injunction contained in it, where St. Charles Borromeo directed his readers on all occasions "to consult the architect." The chairman announced the decease of Mr. Rogers, one of their members.

Professor Donaldson wished to add a few words to the brief eulogy contained in the *Builder*, on this subject. Mr. Rogers was a man who, in a practical point of view, was held in the highest respect. He was a man of great and sound judgment, and true and just in all his transactions. In *personnel* he did not display these qualities, but they were inherent elements of the man, and in works of charity and well-doing, he was always prominently forward.

Thanks having been voted to the various donors,

Mr. Digby Wyatt read "A few Notes on the Crannoges, or ancient Lake Castles of Ireland," to which we shall return.

Mr. Gordon M. Hills then read a "Review of the Architecture and History of the Round Towers of Ireland," which we give *in extenso*, on another page.

Both the papers were illustrated, the latter profusely and admirably so, with about fifty drawings of towers, and many sheets of details.

Mr. Godwin, in moving a vote of thanks to the readers of the respective papers, expressed his admiration of the perseverance and skill exhibited by Mr. Hills in the work he had undertaken. It was to be regretted, he thought, that the architectural antiquities of Ireland were not more known and studied by young English architects than they were. They were not so well known as they should be. No sight had impressed him so much as, on his first visit to Ireland, did these romantic relics of remoter times,—these picturesque and striking groups of churches and crosses, with the lofty round tower rising boldly in the centre. At Monasterboice, for example, you found yourself, after traversing an extensive tract of country, wading through grass and weeds 4 or 5 feet high, and you came suddenly upon the ruins of two or three ancient churches, immense crosses, covered with figures, one of the latter 20 feet high, and, towering and tapering upward over all, one of these mystical-looking round towers, which had an unspeakably imposing and picturesque effect, as it stood out in the landscape, with the clouds sailing rapidly by overhead. A study of the architectural characteristics of these extremely interesting towers suggested the analogy and the connection that appeared to exist between the works of early peoples, the Pelasgic character of the openings and of the masonry, the occurrence of the angular head to windows, or straight-sided arch, and the mode of covering some of the vaults and passages in the mounds,—the stones overlapping one another, and one ultimately covering in the top, as in the early treasuries of Greece,—afforded instances of what he meant. These towers of past times suggested to his mind another illustration of the fact, that all architectural forms have been arrived at step by step, a fact that tended to establish the unlikelihood that existed of our jumping at once into a new style. What he meant to say was this — we found the germ of the vast Egyptian pyramid in the simple mound of earth or the heap of stones thrown upon the grave of a departed friend, in all countries. In like manner we may trace the ancient Greek temple in all its elegance and purity to a simple altar-stone, with a few stones round and about, to maintain the sacredness of the precinct; while, in the round towers, as he wished to suggest, we saw the elaboration of the simple pillar of memorial. These memorial stones were scattered all through Ireland. One of the first things done by the children of Seth, as mentioned by Herodotus, they would remember, was the raising of two pillars. Jacob set up a stone on many occasions. Many still remained. At Tara there was one; and coming to Yorkshire there was one of some height at Rudstone. A round tower was an ultimate elaboration. The crannoges described by Mr. Wyatt, were a character of structure also but little known, but of a remarkable era, when men were obliged to make their own land in the water, to get out of the way of their fellow-men. He concluded by moving a cordial vote of thanks to both gentlemen.

Mr. Lewis seconded this, and inquired of what material the floors were composed. Was it to be supposed from the frequency of fires that they were of wood?

Mr. Hills said he only knew of three floors remaining, and they were imperfect.

Mr. Fraser thought it would be interesting to determine whether these round towers were intended as monuments, means of defence, or lighthouses. It did not appear quite clear to him, that they were intended for ecclesiastical purposes.

Professor Donaldson had come to the conclusion, from a tour he took in Ireland three years ago, that these towers were intended for bell-towers attached to the churches, hand-bells being used, and for places of defence; the parapets of the roofs of the churches were all fenestrated and fortified, and he (the Professor) hoped to be able during the session, to give a paper on some of the peculiar antiquities of Ireland, showing that they were intended both for ecclesiastical purposes and purposes of defence.

Thanks having been accorded, the meeting adjourned to January 25th (but as that day is fixed for the marriage of the Princess Royal, it is doubtful whether the members will then assemble).

REMOVAL OF FOUL AIR FROM KITCHENS.

SIR,—In reply to your querist, who wishes to be informed how to remedy the nuisance of having the foul air from the kitchen pervading the upper rooms and passages of his house, I beg to suggest that, instead of the openings in the sides of the chimney-breast, which he sagaciously doubts the efficiency of, if he were to provide each fireplace in the upper rooms with an independent and sufficient supply of fresh air, the draught from the lower passages (the doors or windows of which are generally open), would be very materially lessened, if not entirely cut off; and he should also provide an exhausting-pipe, of wood or any other of the numerous materials of which piping is made now-a-days, having its inlet orifice at the ceiling of the passage leading to the upper rooms, and immediately over the door, and the other end opening either into the ashpit immediately under the bottom of the grate, or over the fire, just above the bottom of the mantel-frieze, I think there is little doubt as to the efficiency of such an arrangement; and the whole, being self-acting, is not likely to be injured by the stupidity or dislike of servants, to which, I believe, must be attributed more than one failure of sanitary appliances.

I must add that it is of course intended to confide the work to an intelligent person, who will be able to see the exact supply and exhausting power required, and the most eligible position for each.

ANTI-KITCHEN-STUFF.

THE ANOMALIES IN THE PRACTICE OF GLASS-PAINTING.

THE recent exposure, in your editorial columns, of the "anomalies" in the present state of glass-painting in England, has, I perceive, evoked the opposition of "Justitia," who would fain sanction the tyranny of commerce over art, and attempts to justify the promoters of the system.

With many of your readers I think the interest of the factor of sacred art would have been better served by "Justitia's" silence than by such advocacy as he has set forth. His pleadings, I find, amount to these:—

Firstly.—That the practice of stained glass work is less a matter of art than manufacture; and this, because it happens to involve mechanical aid in a portion of its process; "Justitia," deducing from this circumstance the propriety of artists of repute working under the patronage of art-factors,—men who are confessedly innocent of even elementary executive skill.

Secondly, that the practice, which is devoted to the expression of the most sacred subjects that can fall within the province of art, may be delegated, consistently, to men of commercial mind, who, as far as art in glass is concerned, stand in the position of a kind of hybrid between modified Barnumism and energetic clerkship.

Thirdly, that "*artists of repute*" are of necessity the men to whose labours must be due the resuscitation of the art of glass-painting.

Fourthly, that the artists engaged in the pursuit may not be the most righteous guardians of their own fame, and that this matter is one which may properly be left to the care of him who, as "Justitia," with innocent *naïveté*, informs us, "will introduce their names wherever he has the opportunity."

Fifthly, that an "artist's time" *can be far better applied* than by his giving personal attention to the details of the process which involve the realization of his own ideas, and that he, moreover, is unable to afford to undertake this supervision.

We are then asked to note that artists of reputation require "such emolument as cannot be yielded to them out of the prices paid for glass-work," but that, notwithstanding this difficulty, art-factors obtain "*the highest talent that can be procured*," and pay to the artist the price that he may "himself set upon it," the inference being, that 5 times 2 may come out of 6, and that the art-factor (of all other people) is utterly indifferent to emolument altogether.

Now, the idea that stained glass-work is not an art, as you, sir, have asserted it to be "in the strictest sense," will be startling to those who are aware of the fact that the practice of the *sculptor* involves a process perfectly parallel in its art and mechanism to the one in question. In each pursuit the artist himself represents the invention, the art, the control, and the responsibility of his work. Next in order come, on the one hand, the artist-carver, and in the other case the artist draughtsman; then the "painters," and the "glaziers," the "moulder," and the "kilnman." Has the absence of the art-factor, as a mediator between the sculptor and *his* patron, been any bar to the progress of sculpture in England? Have Foley and Gibson felt it inconvenient to accept commissions *direct* from their patrons? Have they found it awkward, or unprofitable, to execute their work by surrounding themselves with assistants and scholars? Have these "artists of repute" placed themselves in the tender harness in which "Justitia" recommends artists of repute to trot barren supernumeraries to affluence and fictitious reputation?"

Conceive a sculptor of reputation, deriving his commissions by the process which "Justitia" thinks beneficial to glass painting! As to the theory that the name of an artist of acknowledged repute is a guarantee for the worthiness of a work in stained glass, it is only necessary to point to the signally unsuccessful works produced in this way, for a practical commentary on this head. Sir Joshua Reynolds was an artist of repute; yet witness the notoriously unfortunate result of *his* essay in stained glass design in the window at Oxford. John Flaxman, an artist also of repute, attempted the art of Cellini; and, while producing with this view his sculpturesque "shield of Achilles," developed scarcely one of the native characteristics of the goldsmith's art.

The well-informed patrons of art are not likely to be misled by this new-fangled "artist of repute" theory. In all likelihood the Barnums of glass-painting, profiting by "Justitia's" suggestion, may bait their hooks with "artists of repute," and wheedle the unwary with the alluring morsel. There are, however, those who will understand that the artist who shall do good service to art in glass must, like the goldsmiths of old, be master not only of deep art, of the human form, and of the study of drapery, but he must also be fluent in ornamental design, and must know well the peculiar properties of colour in glass, and the office and due restrictions of his materials; also he must be imbued with the art of the architect, and possess much other technical knowledge down even to work of the glazier. Are matters like these the concomitant studies of artists of repute in these days?

"Justitia's" statement, in *couleur de rose*, of the conscientious care observed by the art-factor in rendering the intentions of the artist, is somewhat irrelevant to the *fact*, that, like slop-tailoring, such execution is not unfrequently "put out to do," and thus removed from the supervision described by Justitia. Presuming, however, that artists of repute could be found capable of adapting their talent to the technical necessities of glass painting, are the terms, as stated by "Justitia," likely to seduce the artist from his independent position, and the influences which encouraged him to reputation?

The incompleteness of "Justitia's" analogy leaves, moreover, a doubt as to how a work produced, under such circumstances, at one time, affords any guarantee, to purchasers and the public, that works of similar excellence or character will continue to issue from the same establishment, seeing that the artist of repute in question may find it convenient and agreeable to shun the possible cupidity and caprice of the commercial man, his employer, and return to the position in which his reputation was at first nourished.

Your declaration, that selection and due discrimination of true art competency and technical knowledge will offer the best encouragement to those followers of the art who have devoted to it the study due, will, by reason of its truth, remain unassailable; for not only do you thus champion the real interest of the art, and its patrons, but also that of the pupil; and furthermore, you show that by no other process can the stagnation of the art be avoided, or *emulation*, that mainspring of all intellectual action, bring forth in the matter its natural results.

Art, rightly viewed, is a sacred trust, and artists, as they will be held accountable in the future, may not delegate any of their functions to those who in art live only for the present. In this matter "all hinders that does not help." Shall, then, the universal pandering to mercantile considerations, which so unhappily distinguishes our age, be chronicled in one of the most enduring testimonies, for good or evil, which it is in our power to transmit to posterity? VERITAS.

THE CHATEAU OF BLOIS.

THERE are few places in France of greater interest to the historical or architectural student than the ancient town of Blois. Its time-honoured château, — the cathedral, — the picturesque old church of St. Nicholas,—the episcopal palace, with its gardens and terraces overhanging the river Loire,— the baths of Catherine de Medici,— its steep streets and quaint old houses,—all combine to render Blois one of the pleasantest places of sojourn for an idle week or two. But it is only with a description of the château that I intend to trouble your readers at present.

This celebrated castle, which, in the words of a French writer, has served as the residence of more than a hundred crowned heads, princes and princesses, has been converted into military barracks, and is at present garrisoned by a battalion of the 96th regiment of infantry. The chapel, too, which was once used exclusively for the devotions of royalty, is now converted into the workshop of the regimental tailor. Surely if there ever were "sermons in stones," it is here.

Notwithstanding its occupation by the military, visitors are admitted—as indeed may be said of all buildings of any interest in France, whether they are the property of the Crown or of private individuals. It stands on a precipitous rock, and is approached from the east by an esplanade. Except that the rock is not nearly so steep or grand, its position is not unlike that of Edinburgh Castle. It was built at different periods, and forms, on the whole, a quadrangle with a large court in the centre.

The east front, which was restored by Louis XII. is built with red bricks and stone dressings, and is a fair specimen of Flamboyant architecture. This style is interesting to the student of the Renaissance, as having many points in common with it, and as immediately preceding it. The Flamboyant, or Burgundian architecture, as it is sometimes called, is remarkable for the richness and profusion of its detail, and in that respect resembles the Florid English or Tudor style, from which, however, it differs in many other important respects. One of its principal features (from which, indeed, it derived its name of Flamboyant) is the divergence of mullions into flowing wavy lines resembling flame.

Above the circular archway, which leads through this façade into the quadrangle, there is a double arched recess, with a very elegant canopy, in which there formerly stood an equestrian statue of Louis XII. in bronze. The Latin inscription still remains. The windows on either side of the archway are deeply inbedded in the wall, and have corbelled balconies. On the top is a richly carved parapet, with dormer windows appearing behind. Immediately after passing through the archway a cloister, every pillar of which is ornamented with Gothic lace-work of a different design, extends the whole length of that end of the quadrangle. Within this lace or trellis work, there were originally gilt *fleurs-de-lis*, which have been obliterated in the course of time. These pillars are alternately circular and octagonal. In the corners of this side of the building, two square towers are placed. Louis XII.'s grand staircase is situated in the north corner tower. This staircase, which is turnpike, has a groined arched roof, supported in the centre by a large stone newal, which is beautifully carved, and divided into compartments. The ribs of the roof spring from a coronet, formed on the top of the newal. Before leaving this part of the château, I must take notice of a peculiarity in the ornamentation, which must certainly now-a-days be considered a blemish. The grand staircase which in other respects is truly admirable, is defaced in many places by ornaments of the most indelicate description. The same remark applies to the ornamentation of many of the windows in the exterior of the façade.

Louis XII. died here in 1504. While he lay on his deathbed, prayers were offered up for his recovery in the churches in Blois, as well as throughout the kingdom. I cannot refrain from quoting a passage from a contemporary writer, as showing the affection with which this good prince was regarded by his subjects. It also affords an insight into the peculiarity of some of the religious observances of the period. "On eut vu," says Saint Gelais, "jour et nuit à Blois, à Amboise, à Tours, et partout ailleurs, hommes et femmes aller tout nus par les églises et aux saints lieux, afin d'impétrer envers la divine clémence grâce de santé à celui que l'on avoit si grand peur de perdre, comme s'il eût été le père de chacun."

The north side of the quadrangle, which overhangs the most precipitous part of the rock, was erected by Francis I. and is one of the most beautiful examples of the debased Italian style. A staircase-tower, which leads to the suite of rooms known as Catherine de Medici's, arrests the attention by its extreme elegance. The restoration, or rather the renovation, of this staircase, and other parts of the building, was commenced in 1845, by Louis Philippe; the architect to whom the task was entrusted having devoted to it two years of preliminary study.

As this staircase is remarkable for beauty and design, a particular description of it may not be uninteresting. The tower is of an octagonal form, and the stair turnpike, with an ornamental stone newal in the centre. On the side next the quadrangle the stair is open, each of the angles of the octagon being formed by pilasters, which run the whole height of the building, and on the exterior of which there are niches, with statues and beautiful canopies. Between the pilasters there is open stone railwork, which takes the rake of the stair. The compartments of this open balustrade are filled either with Francis I.'s Salamander and F, encircled with the crown, or with a swan pierced by an arrow and three C's interlaced. The latter was the device of Claude of Lorraine, the letters recalling her name and her motto—*Candida candidis*. All the details are Italian; and the whole of the ornaments are so delicately executed as to seem to have been intended for a drawing-room chimney-piece rather than for a large building. Although in Italian architecture we do not find gurgoyles or spouts employed, they are here introduced with a remarkably fine effect. The interior of the staircase is ornamented with the same delicately-carved niches and canopies.

Beyond the staircase tower to the west there runs a piazza. The dormer windows of this range, which are flanked by pilasters terminating in tall crocketed pinnacles, are similar in character to those at Chambord, and are very elegant. The mullions of the windows are flat in front, and beautifully panelled, instead of being moulded as they generally are in English architecture. There is another peculiarity which I ought to mention. Instead of the half mullion and splay moulding round the sides and lintels of the windows, which we generally see in English buildings, there is merely a bede or quarter round not very deeply cut.

Above the cornice of this façade there runs an ornamental balustrade, which is formed of the letters F and C, while the top of the roof, which is very high pitched, is crowned with an ornament composed of *fleurs-de-lis*

On the first story of the exterior façade—that which overhangs the rock—there is a range of oriel windows; and on each succeeding story, an open arcade extends the whole length of the building: on the highest, however, it becomes a colonnade with balustrading. From the pedestals of the columns, which form this gallery, project enormous gurgoyles. There is a peculiarity in the corbelling of the oriel windows, which I must notice, as it differs altogether from anything we find in English architecture of the same period. The mouldings are purely Roman, and follow the octagonal line of the oriel at the upper part of the moulding; but, as it descends, each compartment of the figure takes a triangular form, the point of which extends to the centre of the front of the octagon, and in this way forms the half of a star on the horizontal plan. The effect is very beautiful, and the form exceedingly simple, though from the difficulty of explaining it without a drawing, the reader may be inclined to suppose otherwise.

The whole of this range is built of beautiful cream-coloured stone, with the exception of the chimney-stalks, which have stone dressings, and are filled in with brick. The tesselated porcelain floors, and the ceilings, which are ornamented with arms, badges, and initials, have all been restored after the original plans. Some of the latter are so gorgeous as almost to fatigue the eye. No doubt this glaring appearance would in a great measure be subdued and softened down, if the apartments were furnished. We learn from a writer in the reign of Francis I. that the walls were hung with either tapestry or leather, the gloomy aspect of which was relieved by gold. In one or two instances the ceilings were covered with tapestry. The same writer tells us, that the columns which help to support the roof of the magnificent room known as the *Salle des Etats*, were covered with purple velvet, studded with numerous *fleurs-de-lis* in gold. The ceilings of the apartments of this range are formed by the joists which support the floors of the rooms above. The chimneys, like those at Chambord, are very high, and highly ornamented with arabesque work.

The spot where the Duke of Guise was murdered by the minions of Henry III. is pointed out to the visitor. He was struck down as he was raising the arras to enter the king's room. The particulars of this dastardly murder, which was followed by that of the Cardinal of Lorraine, the duke's brother, are too generally known to require more than this passing notice. The west side of the quadrangle was built by Gaston, Duke of Orleans. It is Palladian, but possesses little architectural beauty, although designed by Mansard, the architect of Versailles. The northern gable was formerly connected by a bridge with the gardens of the château, which lie on the opposite side of the deep ravine on the north of the building.

A little behind the south end, which has never been completed, stands a detached square tower, known as the *tour de foix*, where Catherine de Medicis, striving to penetrate the inscrutable future, was in the habit of consulting the stars. Over the door which opens on to the flat paved roof is the inscription—"*Uraniæ sacrum.*"

J. M.

"QUANTITIES" FOR TENDERS.

I agree to a certain extent with your correspondent (Mr. H. J. Brown) in his letter of the 26th ult. on the subject of "Quantities" being a matter requiring revision both by professional men as well as the building trade in general. At the same time I wish to express my opinions in a somewhat different light from that of the gentleman before alluded to, who evidently writes as an architect; allow me, therefore, to venture an opinion on the builder's side of the question.

Common sense must dictate that he who desires to build a house should necessarily pay all expenses attendant thereon—the architect receiving instructions from his client to publicly advertise, which is, in fact, to obtain an unlimited number of tenders for such works from builders, who may be responsible or irresponsible parties. Then comes the query, who is the most competent man to take out the quantities? Most assuredly the architect; who, knowing his system of construction and specification, must produce a more correct bill of quantities than can be produced by the builder, who in many cases is without any specification to enable him to price correctly the estimate in detail.

I may mention quantities are now before me on which I am expected to tender without any specification, and for which 5*l.* have been left as evidence of good faith for receipt of tenders, or as deposit for such quantities (which I am not aware), for an estimate of works amounting to about 1,000*l.* Surely this is a matter worthy of consideration, as all must be fully aware that, however explicit a bill of quantities may be, it is not sufficient data to estimate upon, unless accompanied by its twin document the specification. The writing and supplying of specifications after acceptance of tender, is investing the architect with additional power, for by his detail of specification it may prove a matter of 20 per cent loss or gain to the approved builder. Hence such wide tenders as have appeared of late in your columns are not so much the fault of "blind builders," as may be generally imagined; but that a prudent contractor would price out his quantities at prices for the best quality and workmanship (in the absence of the specification), whilst others would estimate at cheapest of both labour and materials—putting aside the chances of a rogue or fool being in the market. Does it therefore not appear sufficient that a contractor should lose his time

in preparing the estimate, &c., instead of, as your correspondent proposes, that each party pay a sum equivalent to his share of the expense of preparing such quantities. I feel confident that the trade will agree with me *en masse*, as to an excessive item which would require to be added to the cash account yearly for such charges, as to demand some consideration as to the value received for such moneys paid out.

It appears evident that until some definite course be adopted, we shall ever have our mind and vision alike distressed by witnessing such lists of tenders as have appeared of late. I do not allude to particular cases; but the fact proves itself, that where some half-dozen firms of similar position in the trade are called upon to tender, as in the list of Cancer Hospital tenders which appeared in your journal of the 26th ult., the average between highest and lowest does not exceed 10*l.* per cent.

Anxiously waiting your able opinion on this all-important subject, which, if neglected, must ultimately destroy all affinity which should exist between the profession and the trade,

FRED. C. MORRIS.

*** Mr. H. J. Brown writes to complain that Mr. Kenshole (p. 26, *ante*), misunderstands and misquotes him. We have not space to repeat statements, and must leave our readers to compare the two letters for themselves.

APPOINTMENTS UNDER THE HEALTH ACT.

SIR,—I should hope in the amended Public Health Act some clause will be inserted to compel Local Boards of Health to appoint properly qualified officers as engineers or surveyors to those Boards, as is the case with the "Metropolitan Building Act." In some instances that have recently occurred men having no pretensions for either profession have been appointed, to the exclusion of experienced, competent men, merely from caprice, or from the heterogeneous materials of which those Boards are composed, not having the proper knowledge to select a competent officer. It is absurd that Boards of Health should be allowed to appoint mere land-surveyors, or even masons or carpenters (as it is well known many of these offices are filled by men of this class) to offices that require the experience of an engineer; or that Boards of Health should advertise for qualified engineers, and then appoint a mere mechanic at mechanic's wages. It is a great stretch of imagination to suppose, that by merely appointing a man to such an office they confer upon him (by inspiration) the requisite professional knowledge. I think it is exceedingly unfair to professional men, and conduct that requires the loudest condemnation of the press that protects their interest. Complaints are frequently made of the unfair way in which architectural competitions are generally conducted, but I think in that and the instances I have alluded to the words of our great dramatist are literally fulfilled by these public Boards when he says,—

> "Vain man, dress'd in a little brief authority,
> Plays such fantastic tricks before high heaven
> As make the angels weep."

AN ENGINEER.

THE PROPORTIONS OF ANCIENT BUILDINGS.

SIR,—A vast amount of nonsense is being written and spoken about "Christian architecture," stating that the elaborate works we possess grew out of the abstract enthusiasm of its professors, and that the fine examples of Gothic architecture with which this land and the Continent are studded are the result of a mysteriously prompted mission to erect temples to the Deity; that symbolism pervaded the whole design,—the choir, the heart,—the chancel, the head, &c.; and that love for the work on the part of the handicraftsman produced the beautiful details we have in the sculptured decorations. All this is simply moonshine; and if you will invite one or more of the societies to which you belong to carry into practice the following scheme, the flimsiness of these writings and speeches will be apparent, and you would arrive at the secret of that success which we see in the works of the ancients.

How those great workers would have laughed to hear their labours and success described as the result of enthusiasm or religious fervour! They knew better. They knew that in order to design a fine structure they required well-studied mathematical demonstration of quantities,—or, to speak in other words, their well-digested and infallible laws of proportion. These laws and rules (simple, no doubt, in themselves) are lost to us; and to rediscover them is the task set before us: and I want you, sir, who have influence with the architectural societies, to move them to issue a commission to measure exactly, accurately, and mathematically, the internal and external proportions of the following buildings (I select these because they are perfect buildings, unmixed in style or period of construction), and when these are exactly obtained and verified by separate examination, to submit the results to the most eminent mathematicians of the day, and they will soon furnish you with the *laws of proportion* regulating the design of all buildings, whether Classic, Mediæval, or Revival.

In measuring Gothic buildings internally, a vertical plumb line should be dropped from the apex of the arch to be measured, and measurements made at every 6 inches space on the vertical line to the nearest face of the column, &c. I believe a very beautiful but well-defined entasis would be found pervading the entire arch, entirely lost sight of in modern works.

The buildings to measure are Salisbury Cathedral; St. Ouen, at Rouen; Stone Church, Greenhithe; York Minster; Cathedral of Cologne; the Pantheon, Rome; and the Parthenon, Athens.

Reduce them all to one scale and compare the results.

COMMON SENSE.

DECISIONS UNDER METROPOLITAN BUILDING ACT.

GROUND LANDLORDS LIABLE FOR DISTRICT SURVEYOR'S FEES.

ON Thursday, at the Greenwich Police-court, Mr. W. J. Evelyn, M.P. was summoned by Mr. Whichcord, district surveyor, to show cause why an order should not be made upon him for fees amounting to 10*l.* 15s. due on the building of six houses.

Mr. Tucker (of the firm of Messrs. Smith and Tucker, Greenwich) attended in support of the summons; and Mr. Roumieu (of the firm of Messrs. Roumieu, Walters, and Young, Lincoln's-inn) for the defendants.

Mr. Tucker, in opening the case, said that the summons had been taken out against the defendant under the 51st section of the Metropolitan Building Act, which enabled the surveyor to come upon the builder, owner, or occupier of houses, for fees chargeable on any buildings. On looking at the interpretation clause of the Act as to what constituted an "owner," he found it to be a person in the receipt of the whole or any part of the rents or profits. In the present case, the builder, a Mr. Searle, had become bankrupt in the month of July last, and therefore any proceedings against him would be of no avail. It then became necessary to apply to the owner, and the defendant, as the ground landlord, he contended, was liable to pay the fees. He believed it would be said, that no part of the rents or profits, in money, was now receivable by Mr. Evelyn, but if this were to be held an argument against the payment of surveyors' fees, he need hardly say, from the trouble of ascertaining who the lessees were, and the many changes which occurred, that it would be putting it in the power of the ground landlord to enter into such agreements that the fees could never be received by the surveyor. He then came to the question of what "rent" consisted; and quoted Woodfall's "Landlord and Tenant," and also from Coke and Blackstone. The reservation of a peppercorn rental was the creation of a tenancy, and if the freeholder took advantage of that which constituted him a ground landlord, he contended that he ought also to take the consequent liabilities.

Mr. Roumieu said, in appearing that day for Mr. Elevyn, he did not attend to dispute the payment of the fees claimed on account of the sum of money in question; but the defendant being the owner of considerable house property, and holding large quantities of land which would be let for building purposes, he desired that the point might be settled. He then contended that defendant was not the owner within the meaning of the Act of Parliament; and that, if he were so, he was not actually in receipt of profits or rent, wholly or in part.

Mr. Traill said, it was the intention of the Legislature that the surveyor should be paid his fees, otherwise the Act of Parliament would not have given him the power of coming upon the builder, owner, or occupier. The ground landlord, he held, was sufficiently protected by being enabled to charge the money to be paid upon the property, as for money laid out for the ground tenant. An order was then made for payment of the money. It is understood that a case will be drawn up for the decision of the Court of Queen's Bench upon the point.

CURRENT NOTES UPON IRON.

THE current series of quarterly meetings commenced at Wolverhampton on Wednesday, and there was a tolerably numerous attendance of the leading members of the trade. There were not, however, many merchant and other buyers from a distance at the meeting, consequently no great amount of business was transacted in finished iron. There was an evident disposition on the part of buyers to obtain a reduction, even upon the fall of 20s. determined upon at the preliminary meeting. Makers, however, expressed their determination not to sell at less than 8*l.* for bars. But we incline to the impression, that although the leading firms have issued circulars announcing that their terms will now be for bars 8*l.*, hoops, 9*l.*, and sheets and plates, 9*l.* 10s.; yet so small is the demand, and so disproportionate the stocks of puddled iron, that there will be some submission to the demands of merchants, without, at the same time, any alteration being made in the quotations already made. In many cases, orders are urgently needed, and if they are not soon forthcoming, the consequences will be of a very distressing character. Already a very large number of hands are unemployed in connection with the raising of coal and the making of iron in South Staffordshire. Hitherto, however, they have borne their privations nobly, and in a manner which shows that they are not, as a class, so improvident as was at one time supposed. There is however, a limit to endurance.

The best pig iron, customarily used in South Staffordshire, is selling at 3*l.* 15s.

Books Received.

Some Account of the Origin and Objects of the New Oxford Examinations for the Title of Associate in Arts. By T. D. ACLAND, Esq. London: Ridgway, Piccadilly. 1858.

MR. ACLAND'S volume on the "New Oxford Examinations for the Title of Associate in Arts," contains a good deal of information which may be interesting to all who are engaged in architecture and the arts of design.

The immediate object of the publication appears to be to call the attention of parents, schoolmasters, and others interested in the education of the middle ranks, to certain points necessary to the successful working of the Oxford examinations, to awaken local interest in remote parts of the country, and to secure a good supply of well-prepared candidates for the honours of the university in June, 1858.

The author traces the history of middle-class education from the beginning of the century, and points out the great change in the relations of society produced by railways and scientific bodies; and the folly of attempting to ignore the social status earned for themselves by engineers, architects, and others engaged in the successful cultivation of practical science and art.

This branch of the subject is specially discussed in a sort of postscript preface, called forth by a debate at Cambridge, in which the term Associate in Arts seems to have grated on the ears of the Dons, although the term does most appositely express the facts to which it is intended to certify. "But it is needless to dwell on the particular force of the word used," as the author pointedly says,—"after all, what is the peculiar significance of the term Bachelor, that it should be so jealous of the contiguity of Associate? The English are a practical people, and, as Mr. Harvey Goodwin remarks, within a few weeks after the appearance of the first A.A. the public press will assign its own estimate to the mark." (p. xv.)

It is manifest that the author, and those with whom he has been acting, take a deep interest in the arts. When the subject was brought before the universities, in April last, the author especially adverted to the fact that the universities have neglected the subject of art in general education, in which he was supported by his brother, Dr. Acland, the present Regius Professor of Medicine at Oxford. "Many of us," he says, "long felt it to be a serious evil that we have no professor of art. That we have not can only depend on a misunderstanding of his functions. What could he have to do? is asked by some. The truth is, on the contrary, there is scarcely any single man who could properly discharge the duties of the office. Art is the largest mode of expression of human thought, ranging through almost all ages, spoken in every country, and delivered in nearly every material. In buildings, on medals and coins, in porcelain and earthenware, on wood, ivory, parchment, paper, and canvas, the graver or the pencil has recorded the ideas of every form

of society, every variety of race, and every character of mind. It may be confidently said the office can only be adequately filled by one who, having pre-eminent mental qualifications, has also had a thorough classical education in the widest sense, and then enjoyed the greatest and most varied opportunities of research and observation, both of art and of nature. Now, think of the national evil, that our students have this never put before them. What a different thing the public opinion, which judges of our art exhibitions, would become if our patrons when young had hung on the lips of one able to teach, in the temper of a great artist, this most humanizing of all aspects of human life!" (p. 83.)

In the questions set at an examination at Exeter, under the auspices of the promoters of the Oxford plans, will be found some very practical questions on the arts (p. 173), which bear the impress of the hand of the accomplished architect whose name appears in the list of the examiners.

Perhaps the most interesting part of the volume is a series of letters from Mr. Hullah, Mr. Dyce, and Mr. Ruskin, on the connection of the arts with general education, together with two most remarkable letters from Mr. Temple, the master of Rugby. These letters lift the curtain from the gradual working out of the Oxford scheme of examination in one of its most important parts. As to the result, we are disposed to agree with Mr. Richmond, that "the very best thing that could have been done by Oxford to further a knowledge of art is accomplished" in the proposed scheme of examination. Drawing is not only treated as a distinct subject for honorary distinction on its own account, but is specially encouraged in its useful applications, under the head of mechanics, botany, and physiology. This is the true way to promote reality and truth in art. This part of the arrangements is evidently due to the advice of Mr. Ruskin, which is expressed in a letter characterized by fewer peculiarities than usually flow from his somewhat vehement but always thought-giving pen.

We should be glad to aid the circulation of Mr. Acland's well-timed and clearly-written book.

The Burial Acts. By CHARLES GREENE, Clerk to the Burial Board of St. Pancras, Middlesex. H. Mitchener, Eversholt-street, London. 1857.

THIS appears to be a very complete compilation of the Burial Acts passed since 1852, with an elaborate analysis of the whole, the regulations of the Home-office as to the management of burial-grounds, and a general description of the metropolitan cemeteries, the fees and charges for interments, and other useful practical and legal information. The volume also contains a copious index and explanatory notes. It is chiefly designed to afford information on the establishment of parochial cemeteries. The fact that there are already something like from four to five hundred burial boards established throughout the country, proves how fully alive the public are becoming to sanitary improvement, and to the importance and advantage of extramural sepulture in connection with that improvement.

Amongst a series of suggestions to burial boards at the end of the volume it is remarked that "one of the easiest ways of increasing the beauty of a burial-ground is to select a number of good designs for monuments, and to admit none else without special permission, on the design being appointed by the burial board." If the selection were made with taste, of course there cannot be a doubt but that the beauty of our cemeteries would thus be increased; and even where not much taste existed amongst the members of the burial board in respect of special cases, many ugly and absurd memorials of the dead might thus be excluded.

VARIORUM.

UNDER the title of "The Architect, Engineer, and Builder," the first number of a journal, addressed to these professions, has been published in Dublin, which promises to be very useful in the sister kingdom. It announces, amongst other things, the proposed formation of a new Architectural and Archæological Institute for Ireland. The two departments of the journal, architectural and engineering, are kept distinct. —— The new number of the "National Magazine" contains some good writing and some pleasant tales. It may be safely recommended for family reading.——The "British Workman" is still published, with an affluence of good cuts, at a price which cannot cover the cost. An excellent lady tells us she finds the loan of it very acceptable in the lodgings of the working classes in her district. Other visitors may do good two ways by circulating it.——The "Post Magazine Almanack" (Pateman, Wine Office-court, Fleet-street) contains the names of forty Insurance Companies that have failed during the past year, also the changes of every description that have taken place during the same period, the particulars respecting thirty-eight Insurance Companies that have been brought into the Court of Chancery under the Winding-up Act, and a list of the directors of all the Insurance Companies in the United Kingdom. A summary shows that the largest number of Assurance Offices was founded in 1854 (35), and that the year in which the largest number ceased to exist (78) was 1857. The amount of ruin and misery involved in this simple statement would scarcely be guessed by those unacquainted with the facts.——The "Art Journal" begins the new year well with two fine engravings, after Frost and Stanfield, original designs for manufactures, a sketch of the life and works of William Linton, an engraving of a charming monument (to the late Miss Hutton) by J. Edwards, who ought to take a high place in his art, and a continuation of Mr. and Mrs. S. C. Hall's charming "Book of the Thames." Add to these a number of smaller articles, with all the art-news of the month, and the result will be seen to be a number of great excellence.——"The Royal Gallery of Art," by the same editor (published by Colnaghi and Co.), has reached its 28th number, and this contains Eastlake's "Good Samaritan," the "Storm," by Van der Velde, very carefully engraved by W. Miller; and the "Infant Christ," by C. Maratti, cleverly conveyed by Lecomte. What is to become of the fine set of water colour copies of the Royal Collection which has been made for the work? It is to be hoped that they will be kept together. They would make any house worth a visit.

Miscellanea.

COMBUSTIBLES MADE FIREPROOF.—It was long since suggested in the *Builder*, that the dresses, curtains, and other combustible properties in theatres, might easily be rendered incombustible. "A wonderful discovery" is described in the French papers, which appears to be a fresh realization of this suggestion, A Mons. Carteron is the inventor, it is said, of a new kind of "paint," which renders everything to which it is applied perfectly fireproof. In presence of the Emperor and Empress a series of experiments to test the value of this invention was lately made. Fire was applied to some ladies' dresses, but without any effect, thus proving that articles of the lightest texture may be rendered non-combustible. An attempt was afterwards made to set fire, by means of torches, to the tent of a superior officer, completely fitted up with muslin curtains to the bed, &c. but without effect. A hut built of wood, and thatched with straw, was operated on; but the half to which the new invention had been applied remained uninjured. A small theatre, with all the scenery, &c. prepared with the composition, resisted every attempt to set fire to it.

IMPROVED UNIONS FOR LEAD AND COMPOSITION PIPES.—A good union of soft metal pipes, effected without either heat or solder, and at one half the usual cost, is certainly an improvement; and this is what a patent obtained by Messrs. Stoneham and Lees professes to give. The process appears to be a simple one, effected by a couple of small tools, together with the patent union, and a screw cut on the end of one of the pipes to be united. The other pipe end is beaten out into a sloping or conical mouth, which fits into one end of the union, while the other end of the same union receives the screw end of the pipe to be united with the conical mouthed one. Between the two a washer of wood is placed, which is designed to make the joint complete when screwed up by the tongs or vice supplied for the purpose.

THE PRICE OF COMPLETING THE BIRKENHEAD DOCKS.—We understand that the estimates for the completion of the dock works at Birkenhead have been forwarded to the dock committee. The amount is 1,700,000*l.*: this, with the present debt of 1,300,000*l.* will raise the debt on the Birkenhead docks to about 3,000,000*l.* sterling.

COLLEGE FOR THE WORKING CLASSES.—It is proposed to found colleges in various parts of the metropolis for working-men and their families. The first of these institutions will be forthwith established in the parish of St. Anne, Soho. Attached to the college will be a free library and reading-room for the working-men, a public lecture-hall, and a chapel.

FEVER IN LINCOLN.—For a considerable time fever has been exceedingly prevalent in the city, occasioned mainly, as the medical gentlemen have demonstrated, by want of better sanitary regulations. Few towns are more conveniently circumstanced for a complete system of drainage; and six or seven years since the corporate body got an experienced engineer (Mr. Giles), who had executed extensive drainage works in Holland upon the modern system (which admits of slushing out the drains periodically), to make a survey of the city, and to provide plans. But when the town was appealed to, the small property owners and freemen caballed, and threw the proceedings of the meeting into such riotous disorder, that the mayor was compelled to close the meeting. For some months all the medical men have been actively busy, in all quarters of the city, in attendance upon fever cases; and so numerous have been the deaths distinctly traceable to preventible causes, that in every clear case a coroner's inquest is now held, with the view of getting the state of the city plainly before the Government, in order that, should narrow-minded possessors of property continue to persist in staving off the remedy, Government may be induced to exact compulsory provisions for the security of health.—*Manchester Guardian.*

MACHINERY FOR DRIVING PILES.—Messrs. Sissons and White, of Hull, have provisionally specified an arrangement of machinery for driving piles where steam is used as a motive power. They attach to an ordinary pile-driving machine a steam winch, worked with one or two cylinders, attached to the raking part of the winch frame and to a spiked winding barrel. A flat linked chain revolves round this barrel and a spiked wheel at the top of the pile frame. In order to lift the monkey or hammer, a pair of nippers are attached to the horns of the hammer, which clip a hook into the chain while in motion, and carry up the hammer, and these nippers or catches may be struck off at any height either by hand or by self-acting machinery, in order to disengage the hammer. The invention also comprises other improvements.

MONUMENTS IN WINCHESTER CATHEDRAL.—Two new mural monuments have been placed in the east end of the south aisle and the south transept of Winchester Cathedral. The first is by a Maltese artist, named Darmanin, and consists principally of inlaid work, for which that island is famed. The monument is semicircular at the top, alabaster on a dark dove ground. The second is pyramidal in outline, and of alabaster on a dark marble background, and was executed by Mr. E. Richardson, of London: they are both Crimean mementoes, as detailed in the *Hampshire Independent.*

TO LESSEN COST OF AREA NEAR ST. PAUL'S.—I would suggest, to make this spot a source of profit, and at the same time meet the wishes of those who are in favour of retaining the present view of St. Paul's, that the whole space should be let for some business, such as that of wine merchant, dining-rooms, heavy goods' warehouse, &c. where an excavation to a moderate depth, and a limit to 4 feet in height above the present pavement, might not be objectionable; horizontal flues leading to an ornamental chimney, might be constructed, or even led away to one some distance off.—W. H. B.

HEATING BY GAS.—Mr. Thompson, the Duke of Buccleuch's gardener at Dalkeith, has invented and patented an apparatus for heating apartments and greenhouses by gas, consisting of an upright tubular boiler, in which a coil of pipe is carried round and round to the top, conveying the heat from two jets of gas below, the water heating the air in the chamber within, as well as on the surface without, and the smoke from the gas being carried outside the building by a pipe. The cost of heating a room 16 feet square is said to be about 3d. a day.

ARCHÆOLOGICAL DISCOVERIES. — M. Léon Fallue, says *Galignani*, lately communicated to the Academy of Inscriptions and Belles-Lettres some curious discoveries which he had made at Epinay-sur-Seine, near St. Denis, of vestiges of a Gallo-Roman village and burial-place on the Manoir du Mont, the property of M. Crémieux. Ten yards below the surface a gallery was found, eight yards in length by two in height and breadth. From this gallery doors lead to two lateral passages, each in the form of a Greek cross. At another spot, near the principal street of Epinay, he found a crypt, composed of two galleries crossed by a third, the latter of which opens into a subterranean church, constructed of masonry, of great antiquity. All appear to belong to the Merovingian period.